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A 6-year field study project was undertaken to try out some patterns of special education with neurologically handicapped children. Three phases emphasized these objectives: feasibility, class size, pupil safety, approval, incidence, referral, diagnosis, placement, curriculum, treatment, evaluation, teacher qualifications, parent reactions, expansion, demonstration, and research. In phase 2, 116 neurologically impaired children were placed in either special (64) or regular (52) classes. The special class group generally contained older (1/2 year) and more severe cases; boys outnumbered girls 7 to 1. After a 3-year attendance in a special class, 12 students were recommended for return to regular class (out of 19) while 15 out of 19 children in the regular classes were felt to need special class placement. Steady attendance for 2 years was in favor of special class students (86% to 40.4%). Parents of children in special classes attended meetings concerning their children more frequently than parents of regular class children (52% to 7%). Special class students seemed favored in the few cases of academic comparison although the children were about 3 years academically retarded. Recommendations were made for future research. (RP)

ED026757

AN EXPLORATORY STUDY OF CHILDREN WITH NEUROLOGICAL HANDICAPS IN SCHOOL DISTRICTS OF LOS ANGELES COUNTY

EC002137

Los Angeles County Superintendent of Schools Office

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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AN EXPLORATORY STUDY OF CHILDREN WITH NEUROLOGICAL HANDICAPS IN SCHOOL DISTRICTS OF LOS ANGELES COUNTY

Los Angeles County Superintendent of Schools Office

April, 1963

Laco No. 65

FOREWORD

This publication is a summary of a six-year exploratory field study involving children who were identified as neurologically handicapped in nineteen school districts in Los Angeles County.

The coordinator of the field study and the writer of the report was Dr. John W. Howe, Consultant, Division of Research and Guidance.

Dr. R. B. Walter, Chief Deputy Superintendent, provided administrative support in the development of the project. Dr. Harry Smallenburg, Director, Division of Research and Guidance, served as chairman of the Project Coordinating Committee composed of representatives of the State Department of Education, school districts, and the County Office.

The field study of neurologically handicapped children involved the cooperation of many people. Appreciation is expressed to the chief administrators and other staff members of the nineteen districts which participated in the project, and to the representatives of the State Department of Education, the California State Department of Health, and of this Office. State, County, and district staff members who were involved in the study are listed in the Acknowledgment section at the end of the report.

Special appreciation is expressed also to the Disney Foundation of Los Angeles which contributed $16,700 to the support of the project.

It is hoped that this publication will be of interest and value to administrators, directors of guidance, directors of instruction, school psychologists, supervisors, and to teachers who are responsible for the child whose educational difficulties may be diagnosed as due to a neurological handicap.

C. C. TRILLINGHAM
Superintendent

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INTRODUCTION

The six-year field study which is reported in this monograph began on a very small scale and gradually developed into larger proportions. It ventured into relatively new interdisciplinary territories involving education, psychology, medicine, and law. From first to last, it was carried on not under controlled conditions in the laboratory but under daily operating conditions in a variety of public schools. Naturally, many real-life obstacles were encountered and these necessitated improvisations, changes of plan, and departures from scientifically ideal procedures. Therefore the study should be viewed not as a piece of definitive and well-controlled research but rather as an exploratory field study. This account of the project is offered as a preliminary step toward more extensive and definitive research yet to be done.

Such statistical data as are currently available are presented as part of this report. Further data of a more advanced statistical nature may be presented later on if such treatment proves warranted and feasible. The present report, consisting of some objective data and of the coordinator's narrative and subjective description of the project, is presented now and in this form for several reasons.

First, the work is relatively new in educational, medical, psychological, and legal-administrative practice, and other investigators and interested individuals have requested some advice or at least some report of the situations encountered and experiences acquired.

Second, it is felt that partial though inadequate acknowledgment may be made through this report to those who devoted many hours of extra labor to the work.

Third, the preparation of this report decreases the amount of descriptive and background data which might otherwise have to be included in other reports.

Fourth, it is hoped that the present study provides some basis for further attacks upon the complex and continuing problem of mild neuro-humoral impairment of learning and social adjustment.

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Chapter I

PROBLEM AND BACKGROUND

Definition of the Term NH

NH denotes mild to moderate neurological handicaps

Recent advances in education, psychology, and medicine have resulted in increased awareness of handicapped children who suffer from certain abnormal conditions of the brain and possibly also of the endocrine or humoral systems. These organic abnormalities are not yet fully understood and often remain unrecognized or undiagnosed. They differ in kind or severity and therefore produce a variety of symptoms. In this report the conditions and their symptoms are referred to by the symbol designation NH. This symbol may be thought of as standing for an array of mild to moderately severe neurological (or neuro-humoral) handicaps.

Differentiation of NH from Other Conditions

NH excludes CP, MR, etc.

If the full range is considered, it is known that literally hundreds of neurological or neuro-humoral handicapping conditions exist. A few of them are quite familiar and easy to recognize and diagnose. This is due to the fact that they produce 'motor' symptoms which are easily seen, or mental symptoms which are easily measured on psychological tests. Examples are cerebral palsy (CP), epilepsy (EP), and mental retardation (MR). In CP and EP the motor symptoms are easily seen. In MR the mental symptoms are easily measured by routine psychological tests of intelligence. Most public schools already have special CP, EP, or MR programs. Therefore these conditions were not included in the present project, and by definition they are not intended under the term NH.

Descriptive Examples of NH

Examples

Following are four descriptive examples of NH. Each example is a generalized case chosen to illustrate a somewhat different brain function.

Disturbance of inhibition

1. An NH child may suffer from physical disturbances in the sub-cortical inner areas of the brain which normally regulate the myriad streams of nerve impulses to and from all parts of the organism. For normal functioning, some volleys of impulses must be disregarded, suppressed, or inhibited for the moment while others are singled out, facilitated, and acted upon. An NH child whose functions of <u>inhibition</u> are affected is at the mercy of successive volleys of impulses that usually occur from moment to moment in any waking organism. Thus, he may get out of his seat, move around, and talk out whenever these impulses occur to him. He cannot suppress momentary volleys of impulses as well as other children his age. He cannot resist the child's urges to motion. He cannot sit still or be quiet for more than a few minutes. He cannot rule out other thoughts or feelings and concentrate or pay attention for substantial portions of a class period. Hence, at an early age, he might easily be described by others as "immature and having a short attention span"; or as "hyperactive and restless". At a later age, he might be called "impulsive and impatient"; or "nonconformist and antagonistic". As an older child, he may be termed "hostile and aggressive"; or as "emotionally disturbed and acting-out".

Disturbance of perception

2. An NH child whose function of <u>perception</u> is affected may be shown a simple geometric design and be unable to copy it correctly even while he is looking directly at it. He actually "sees" objects, drawings, or words as reversed or rotated. Someone may draw his attention to the parts of his drawing that do not correspond to the model. Even then he may have difficulty in

correcting his reversed or distorted mental image. And as soon as the model is taken away, he may be at a loss again. For this reason, he often has extreme difficulty in learning to read or to write. One letter may look like another to him and few look the same way twice. This leads observers to conclude, again erroneously, that the child is "emotionally blocked" from learning to read. They "explain" his failure as being caused by some deep unconscious fear of reading. It is true, of course, that after repeated initial failure at these tasks, a child can certainly develop negative feelings or "emotional blocks" toward reading and writing. In the NH child, however, the emotional block toward reading, if it exists, is probably a secondary effect of initial failure to read rather than a primary cause of such failure.

Disturbance of retention

3. The function of retention (memory) is often affected in the NH child. He may put in as much or more effort than the average child on a task or lesson and yet retain little or none of it the next day or next week. In some cases, teachers and parents have reported that an NH child has drilled himself until he is letter perfect on a list of ten spelling words. However, if immediately thereafter the same words are given to him in a reversed or mixed order, he can remember only a few of them. And by the next day or the next week, he is lucky if he can recall any from the list. Cases as extreme as this may be recognized as due to organic pathology; but in lesser degrees, this lack of retention (amnesia) is often misascribed by others as due to "carelessness", "inattentiveness", "lack of interest", and so forth.

Disturbance of conceptualization

4. <u>Conceptualization</u> is frequently affected in NH children. This includes the ability to abstract, to generalize, or to categorize; to compare, to judge, or to reason. If aberrations of the three preceding functions are present as they usually are, it is not difficult

to see why the fourth function is affected. If a child has difficulty in attending to material in the first place (disinhibition); sees or hears the material in a distorted way in the second place (misperception); and can't remember it well in the third place (amnesia); then in the fourth place he is certainly not likely to do a superior job in the higher mental functions which depend on the smooth functioning of the earlier ones.

Individual differences in NH children

All NH children do not exhibit all four types of aberrant mental functions illustrated above. In any individual case, only one or two of the functions may be impaired; the remaining ones may be intact or even superior. The extent to which these four misfunctions tend to occur separately or together still needs a great deal of research and needs to be related to more detailed medical knowledge of areas of the brain.

Difficulties of Identification

Difficulty in recognition or diagnosis of NH

In NH the symptoms are related to CP, EP, or MR, but are so moderate that they are usually not recognized. Moreover, discovery of NH children is further obscured by differences in age, maturity, family factors, and educational factors. Because of unfamiliarity, mildness, and complexity of the problem, it is conceded that NH sometimes is difficult to detect or diagnose by routine practices in education, psychology, or medicine at the present time.

Confusions, 'maskings', and misexplanations

For these reasons, NH tends to remain 'masked' or hidden, and its effects are often confused with other conditions or mistakenly attributed to other causes. As a result the sufferer or his family may receive little or no real help from remedies suggested on some mistaken basis. Many children showing adequate total IQ, but hyperactivity and poor reading or other poor achievement, are regarded as being 'emotionally disturbed'. They are frequently referred to clinics for psychotherapy for themselves and their parents. The

misdiagnosis of NH children as solely emotionally disturbed is readily understandable. Hyperactivity can give the same appearance as 'restlessness' due to emotional tensions; perceptual distortions and memory failures can resemble the effects of unconscious repressions. And difficulties of attention, concentration, and low frustration tolerance can simulate the interruptions of 'emotional blocks', resistances, or hostilities. Moreover, after repeated failures stemming primarily from NH, it is indeed probable that emotionally defensive reactions may also be acquired by the child. The emotional disturbances become superimposed upon the original NH difficulty. Adjustment problems may thus be doubly intensified.

Interdisciplinary nature of the problem

The foregoing paragraphs reveal that NH constitutes a complex problem. It involves a number of professional fields. These would certainly include medicine, psychology, education, law, and sociology. Physicians, especially those in research, pediatrics, neurology, endocrinology, and electroencephalography, are devoting more and more attention to the subtler organic conditions involved, and to means of diagnosing and treating them. Psychologists are giving increased attention to tests of perception, to psychophysiological tests, and to overly wide 'discrepancies' between the various abilities found within the same individual. Educators are finding that they must set up and evaluate new patterns of instructional, administrative, financial, and legislative code provisions. All of these are necessary to some degree for every child, but particularly necessary in interdisciplinary combination for the NH child.

Many peace officers, attempting to motivate failing and rebelling students to stay in school and out of delinquency, have voiced the need for school laws and programs more suited to children of various abilities or disabilities. And finally, as laymen, great numbers of parents struggling to rear their children successfully

would warmly agree that NH is a problem in the challenging 'discipline' of parenthood.

Lack of Special Education Facilities

Dearth of public school provisions

At the time the first small scale phase of the present study was begun (1955), no systematic public school programs for NH children were known to exist.[1] Numerous other remedies were frequently attempted. These included transferring the NH child to a different or more permissive teacher, sending him and his family to a mental hygiene clinic, giving him extra or 'remedial' help in reading, having him repeat the same grade, placing him in a cerebral palsy class, sending him home for misbehavior, suspending, or excluding him. These remedies did not appear to yield satisfactory results. Many cases were transferred, re-transferred, re-referred, and re-studied throughout their entire school careers, with little real improvement. Jolles (1956) reported an experimental special class at Joliet, Illinois, for 'brain damaged' children, but the class was for those with IQs in the severely mentally retarded range.

Limited private school facilities

One other possible solution, for those fortunate enough to be able to avail themselves of the opportunity, appeared to be enrollment in certain specialized private schools. These were not just ordinary private schools with an academic orientation, but rather clinically oriented schools whose staffs had particular knowledge, interest, and skill with 'brain damaged' children.[2] Their experience indicated that NH children might be taught

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[1] It was subsequently learned that programs were also being initiated in some form in Illinois, Maryland, and New York at about the same time.

[2] In Los Angeles, two of these schools, the Frostig School and the Dubnoff School were known to the coordinator and gave valuable advice and assistance to the project.

successfully in very small groups (approximately four) by a specially trained teacher with an assistant ready to aid in case one or more children manifested extreme hyperimpulsiveness. This was encouraging but appeared to need adaptation if costs were to be brought within feasible limits for public schools.

Chapter II

SURVEY OF THE LITERATURE

Recognition of the NH Syndrome in the literature

Neurological disorders that are gross, obvious or characterized by classical symptoms such as paralysis, sensory loss, or marked impairment of memory or intelligence are dealt with by a literature that is indeed established and extensive. By contrast the studies which deal with the mild and masked group of symptoms that make up the NH syndrome are exceedingly few and of comparatively recent origin. The NH syndrome described in the preceding chapter has only been recognized gradually during the last quarter century. During this time it has been dealt with in the literature by a variety of investigators using many different terms. The apparent unrelatedness of the mild symptoms, and the fact that in children it is not easy to distinguish pathology from immaturity no doubt are complications that help to explain this state of the literature.

In the light of these conditions, it is understandable then that the subsection of the literature that deals with methods for educating NH children in <u>public</u> schools is represented by only one work in those surveyed below, and that it is of very recent publication.

Bradley

Charles Bradley (1937), a physician dealing with 'behavior problem' children, described essentially the NH syndrome and pointed out that such children might be benefited by certain medications, notably the amphetamines.

Bender

Lauretta Bender (1938, 1942, 1949, 1956), as a physician with experience in a metropolitan psychiatric hospital, has dealt over a long period of time with the problems of recognizing and measuring the symptoms and detecting the organic conditions of NH children. Her numerous publications, such as the monograph on visual perception, the study of residuals from encephalitis, and her articles and books on psychological aspects of brain

disorders have contributed to the gradual conviction that neurological conditions may be responsible for many psychological symptoms.

Strauss and Lehtinen

Strauss and Lehtinen (1947), a physician and a teacher originally working mainly with retarded children, perhaps did more than any others to identify the syndrome and establish its existence through their first volume on the "Psychopathology and Education of Brain-Injured Children." With the help of others, (Strauss, Lehtinen, Kephart, Goldberg, 1955) their projected second volume was published eight years later and the two volumes are still a milestone in this field. Their private facilities (The Cove Schools, Racine, Wisconsin) served as a small but advanced study center for teachers and researchers from various parts of the nation. Their concept about the syndrome and their nomenclature for it have shown certain shifts over the years, beginning early with the term "exogenous mental defective", passing on to "brain injured" and recently to "perceptually handicapped."

Lewis

Richard Lewis (1951) aided by Strauss and Lehtinen provided a very readable account of life with an NH child as experienced by a sensitive and intelligent parent.

Doll

Edgar Doll (1951) described the NH syndrome very fully and accurately. He discussed the symptoms under 18 topics, such as behavior, intellectual functioning, language, speech, visual perception, auditory perception, laterality, attention, emotionality, concept formation, retention, effort, and so forth. He agrees that "symptoms of central nervous system impairment" are numerous and depend somewhat upon the areas of the brain affected, such as areas affecting primarily motor abilities, language and speech, sensory perception, integration, retention, and others. For those cases in which "the impairment is so diffused as to produce disorders in multiple areas, the consequences are evident in a behavior complex" or syndrome for which he suggests the term "neurophrenia".

Laufer and Denhoff

Laufer and Denhoff (1957) referred to the syndrome as the 'hyperkinetic behavior syndrome'. Their description is quoted on one of the forms used in the present study (Form #26539).

Stevens and Birch, J.W.

Stevens and Birch (1957) reviewed the multiplicity of terms by which MH children are referred to in the growing literature. Out of deference to the work of the Cove Schools group they suggest that the syndrome be referred to as the Strauss Syndrome. They list its essentials as erratic behavior on slight provocation, increased motor activity, poor organization of behavior, distractibility, and persistent faulty perceptions. They point out that reference to the syndrome by a proper name is free from assumptions as to etiology.

Siegel

Ernest Siegel (1961), a teacher of MH children, was commissioned to produce a book for the New York Association for Brain-Injured Children (which began with three members in 1957). In this small but comprehensive volume many topics and ideas are succinctly presented which have direct value for parents, educators, and physicians.

The brain-injured (MH) child is defined as suffering from "perceptual impairment, inability to conceptualize adequately, and/or behavioral disorders" (page 17). Siegel lists 13 symptoms as characterizing the syndrome, among which are distractibility, hyperactivity, impulsiveness, perseveration, irritability, talkativeness, awkwardness, poor speech, destructiveness, and aggressiveness. The incidence is estimated as six or seven cases per 1000 births counting only those cases which manifest frank or obvious motor impairment and severe linguistic, sensory, perceptual and behavioral disorders. Such cases in the school population are estimated at one percent. Milder cases are estimated to be more numerous. Much of the author's experience appears to consist of private work and the book does not offer a guide or methodology for public school special classes; "since there is a scarcity

of special classes...parents, of necessity, may have to become substitutes for teachers" (page 87).

Cruickshank, et al.

William Cruickshank (1959) employed the terms "hyperactive or emotionally disturbed." Working with others in Montgomery County, Maryland, he conducted a project in public schools. The study is similar in many ways to the one reported here, and began at about the same time though neither project was then aware of the other. The Maryland study was reported in papers at the annual meeting of the Council for Exceptional Children, Atlantic City, New Jersey, April 11, 1959. It has now been reported in detail in the recent volume entitled: A Teaching Method for Brain-Injured and Hyperactive Children: A Demonstration-Pilot Study. (Cruickshank, W.M., Bentzen, Frances A., Ratzeburg, F. H., and Tannhauser, Mirian T. Special Education and Rehabilitation Monograph Series 6, Syracuse University Press, Syracuse 10, New York, 1961.)

This work presents the results and experiences from operating four small special classes for two years in one school district. Cases were carefully studied and classes equated for average age, IQ, diagnoses, and other factors. Each class was assigned 10 children; 5 had diagnosable neurological conditions and were therefore labeled "brain-injured"; in the remaining 5 children the suspected diagnosis could not be confirmed and they were labeled "hyperactive or emotionally disturbed." All cases, however, had symptoms of the following syndrome: distractibility, motor disinhibition, (perceptual) dissociation, figure-ground disturbance, perseveration, and poor body-image or self-concept. And all cases were retarded academically.

Ages ranged from 7 - 10 years, mean 8; IQs from 51 to 107, mean 80, sigma 14. Two of the classes were housed in the same school and were designated "experimental." They utilized a specified educational approach which consisted of reduced space (cubicles), reduced audio-visual stimuli (monochrome floors and walls, closed cupboards, no displays), reduced psychic stimuli (limited choices,

unvarying routines), and increased stimulus values of instructional materials (color, size, ease of success). The two other "control" classes were located in different schools and were not given any particular physical modifications or psychological structuring. The teachers were allowed to arrange the room and teach the children in any way they saw fit.

At the end of the first year it appeared that the experimentals exceeded the controls, mainly in improved school skills and attention span. The groups then had to be exchanged due to the 'moral' pressures to give each child the best or at least equal opportunity.

At the end of the second year few significant differences remained in favor of the first year experimentals. Most children made gains of from one to three years in academics; also gains in attention span. No significant differences appeared between those confirmed or those with only suspected diagnoses of "brain injury." The authors conclude in favor of the high-structure, reduced stimulus methods and these are fully described. No control cases placed in regular class rooms were used. Also it should be noted that the average IQ of 80 for each of the classes and for the total group would classify the group as being of borderline intelligence.

Birch, H. G. A detailed and comprehensive bibliography numbering approximately 450 references on brain conditions affecting children has been compiled by Herbert G. Birch (1959) and is available free on request from the Association for Aid to Crippled Children, 345 East 46th Street, New York 17, New York.

Chapter III

PURPOSES AND PLANS OF THE EXPLORATORY STUDY

General purposes

Stemming from the problem, the general purpose of the present project might be stated very simply as follows: To explore and to try out in a few interested and available public schools in the Los Angeles area some patterns of special education which might prove beneficial for those NH children who are not receiving the full benefit of ordinary educational facilities.

Specific objectives

In line with this general purpose, the specific objectives emphasized for the three phases of the project are given below. They are also mentioned or reflected in the chronological account of the project which is given briefly in the next chapter.

Phase I

Feasibility, class size, safety, approval?

In Phase I the objectives were to answer such rudimentary but important questions as the following: Can one teacher without specific training manage as many as four or more hyperactive pupils in a public school? Will the pupils harm each other physically? Will they make more academic progress than in regular classes? Will special NH classes be tolerated or supported by principals? by teachers? by parents of NH pupils? by other parents?

Phase II

In Phase II the objectives were stated in substantially the following form in connection with an application for research funds submitted in May, 1959.

Major Objectives (Form #27527)

Incidence

1. To arrive at a defensible figure which adequately represents the <u>incidence</u> of neurologically handicapped children as defined in this proposal. The purpose of this step is to establish a rate of

incidence in order to indicate the scope of the problem in planning and implementing special programs throughout the state. This objective may require a more extended period of study after completion of the present pilot project.

Referral

2. To find out how to screen all children effectively to discover who may have neurological handicaps. The purpose of this objective is to develop initial procedures and criteria for the referral of children whose difficulties may be due to neurological disorders.

Diagnosis

3. To learn how to establish diagnostic procedures (both medical and psychological) that will be reliable in ruling in or ruling out the existence of neurological handicaps as the basis for the child's physical, intellectual, and emotional difficulties. The purpose of this step is to set up conditions for diagnosis that will give a consistent picture statewide of the children classified as neurologically handicapped so that we will have uniformity among those children whose characteristics may fit into a special treatment and educational program.

Placement

4. To ascertain how to set up an adequate system of pupil placement, assignment, or dismissals. The purpose of this step is to provide a means by which there can be a multidisciplinary approach to the selection and placement of pupils into various classes for different ages, sexes, symptoms, degrees of severity, etc., and for reassignment to regular classes after sufficient progress has been made. (See Minimal Criteria for Inclusion, Form #26539), for examples of different reading criteria for ages below 8 years and 6 months.)

Curriculum and treatment

5. To attempt to develop educationally sound systems of guidance and instruction for the neurologically handicapped. The purpose of this step is to build up a school plan whereby the program of guidance and instruction can effectively compensate for the neurologically handicapped child's difficulties in learning and control. (See sheet on Special Needs, Form #26236D in the Appendix.) This may include considerations such as maximum class size; necessary equipment, materials, facilities; special techniques for classroom instruction; parent conferences; parent education and group counseling; and any necessary medical recommendations or treatments.

Evaluation

6. To find out how to evaluate the progress of neurologically handicapped children in relation to the comprehensive objectives of the guidance and instruction programs. The purpose of this step is to develop

criteria and procedures whereby the progress of the child can be measured in relation to the specific elements in the special programs, and when indicated.

7. To discover the functions and competencies required of teachers of neurologically handicapped children. The purpose of this step is to ascertain what the teacher has to know and do in order to determine what should go into the pattern of professional preparation for teachers of neurologically handicapped children.

Teacher qualifications

Parent reactions

An additional objective implied but not mentioned in the material quoted above was that of discovering how parents were likely to react to a method of special education which required extensive diagnostic procedures and removed the child from a regular classroom.

Other statements of purposes

Other formulations of purposes were evolved at various periods. One example is the attempt of a subcommittee to state the chief purposes and plans for the study in terms of a "main hypothesis". Their statement mimeographed for committee use in May, 1958, is reproduced in the Appendix (Form #26518). Another example was a translation of the various objectives (incidence, referral, diagnosis, and so forth) into a set of null hypotheses.

Phase III

Expansion, demonstration, research

For Phase III the objectives were to accede to the requests of interested school districts to join in the field of study; to demonstrate for educators, psychologists, physicians, legislators, and other qualified observers the methods evolved thus far in the study; and to plan and carry out further research in the future.

Chapter IV

PROCEDURES AND DEVELOPMENTS IN THE STUDY

This chapter outlines briefly the chronology of the events and the three main phases which developed during the six-year period of the field study. Also included are the definitions and criteria adopted, the measures utilized, the procedures followed, and the limitations and delimitations affecting the study.

Brief Chronology and Major Phases

In any study extending more than a brief period of time, subtle or even obvious changes are likely to occur not only in the subjects but also in the investigators and their methods. This was certainly a factor in the present exploratory field study which lasted for six years. It involved many coworkers and underwent many important changes, some of which were unforeseen.

The following account seeks to provide a short overview or summary of the important chronological aspects. For brevity and convenience these are presented in schematic form. A fuller narrative account is available in mimeographed form for those who wish it.[1]

The entire field study may be viewed as consisting of three distinct but interlocking phases.

Phase I consists of the early tentative tryouts of special classes starting with only one class and with no 'control' cases for comparison.

Phase II consists of the attempt to form a larger number of classes and to utilize controls.

Phase III consists of the expansion of the project to more school districts, without controls, but with a view to a larger and more carefully controlled future project.

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[1] Address request for this mimeographed account to the Division of Research and Guidance, Los Angeles County Superintendent of Schools Office, 155 West Washington Boulevard, Los Angeles 15, California.

Phase I - Tentative Plans and Tryouts - School Years 1954 - 1958

1954-55 Informal talks and preliminary plans. State Department of Education approves plans for two classes. Basic questions: Can a number of hyperactive NH children be successfully managed and educated in a public school for several hours per day in a small class? If so, how many pupils and for how long? How do such efforts compare with an hour per day of individual or small group tutoring?

1955-56 First small tryout class: San Gabriel. Teacher resigns in three weeks. Replacement found. Teaching approach: Permissive.

1956-57 Second small tryout class added: Palos Verdes. Teacher resigns in three months. Replacement found. Approach slightly more structured.
February '57: Legal opinion expressed by Kern County Counsel that NH children qualify as physically handicapped under California Education Code.

1957-58 Third small tryout class added: Burbank. Older (intermediate age) children. More formal and structured approach. Class discontinued two years later due to other pressing district concerns. Year of planning for Phase II. Committee formed for the Pilot Project for NH Children. Monthly meetings and subcommittee reports. State Department of Education approves plans for 10 to 12 classes for a period of two years.

May '58: Only six additional districts willing and able to pledge special classes. Review Team able to admit only 95 cases by end of June.

Phase II - Pilot Project for MH Children - School Years 1958 - 1960

1958-59 Special classes formed in six additional districts: Bassett, Glendale, Hudson, Lennox, Lowell, and Rosemead. One hundred sixteen (116) pupils contributed by 15 cooperating districts. Some districts contribute mostly special cases, others unmatched control (contrast) cases. Opinion among teachers, administrators, and parents begins to favor increased structure rather than increased permissiveness. Retests desired but not obtainable on all children. Project still carried on informally, no full-time personnel.
March '59: Services of two physicians, Drs. Sedgwick and Zike, furnished by State Department of Health for medical re-evaluations.
May '59: Requests for grant-in-aid submitted to Disney Foundation, approved in June.

1959-60 Continuation of the above eight elementary special classes (and one intermediate).
September '59: Services of full-time coordinator and secretary acquired (Disney Foundation grant).
December '59: Continuation of eight elementary special classes for a third year approved by Department of Education. Consensus favors use of more structured approach including individual cubicles for hyperactives.

March-April-May '60: Planning meetings for expanded program, Phase III, Research and Demonstration Project for NH Children, Department of Education approves up to 25 classes, not confined to Los Angeles County.

Phase III - Research and Demonstration Project for NH Children - School Years 1960 - 1961

1960-61 Five special classes added in Los Angeles County: Bellflower, Lennox (2), Palos Verdes, Westside Union; and one in San Mateo County. Others planned in Contra Costa, Orange, and Ventura Counties. Expanded project now known as the Research and Demonstration Project for NH Children. Consensus still favors structured approach including cubicles for hyperimpulsivity; perception and memory training for learning problems. Plans made for future research on incidence of NH; chief subtypes (hyper-impulsives versus non-hyperimpulsives); optimal class sizes for different subtypes; and various teaching methods (structuredness, permissiveness, use of learner-actuated "teaching machines"); etc.

September '60: Department of Education rescinds agreements for 25 research and demonstration classes due to finances and other considerations.

October '60: Department of Education disapproves continuance of the existing classes in 1960-61 unless authorized by additional legislation. Department states that it cannot initiate, but will not oppose such legislation if introduced by others.

February '61: Assembly Bill 3129 (Rees and Unruh) introduced to continue project.

June '61: Department of Education opposes AB 3129. Advocates care for NH under Senate Bill 616 for Emotionally Handicapped. Legislature adjourned without passing either bill. Study terminated. (Some districts continue small classes entirely at local expense.)

Definitions Adopted

In line with the purposes and concepts guiding the field study, the general committee arrived at the following definitions of the term 'neurologically handicapped'.

Legal-administrative

The legal-administrative definition adopted was suggested in the subcommittee report of December 19, 1957. It is stated in full in Form #26236B, Appendix. It defined a child with NH as any minor who could not receive full benefit from ordinary education by reason of a brain condition other than cerebral palsy (CP), mental retardation (MR) or severe epilepsy. The basic concept and even some of the wording is derived from Section 6802 (formerly 9602) of the California State Code of Education relating to physically handicapped minors.

Medical-descriptive

The medical-descriptive definition utilized was that offered by Laufer and Denhoff (1957). It is quoted at the bottom of the form (#26539, Appendix) listing the Minimal Criteria for Inclusion in the Study.

Psychological descriptive

A psychological-descriptive definition is implicit in the problem description offered by the coordinator at the outset of this report. In this definition an NH child is one who in the opinion of competent professional examiners presents singly or in combination symptoms of faulty inhibition, perception, retention, and conceptualization of such degree and duration that he is adjudged not

normal for his age in learning ability or behavior control, but not of such degree or duration that he is diagnosed mentally retarded, cerebral palsied, severely epileptic, or psychotic.

Special class cases

Special class (experimental) children are those who spent at least one and one-half or two years of Phase II (school years 1958-59 and 1959-60) in one of the eight small special NH classes in Los Angeles County. Children who attended only during Phase I or Phase III are not included in this group because they were not passed upon by the Review Team; moreover, the latter had only one year in the program.

Regular or Contrast cases

Regular class (contrast) children are those identified by the same medical, psychological, and educational measures as for the special class cases, but kept for corresponding periods in a regular class. As mentioned in the procedures and results, these were not full "control" cases in which all factors were equated with the experimental (special class) pupils.

Phase I

Phase I. The period of informal small scale trial of two special classes[1] (in San Gabriel and Palos Verdes) covering the academic years 1955-56, 1956-57, and 1957-58.

Phase II

Phase II. The period of cooperatively planned operation of eight special NH classes in eight separate elementary school districts and of attempted special aid in approximately 70 regular classes for a total group of pupils admitted to the program by the Review Team (N = 149), such operation being directed by a general committee in Los Angeles County and covering the academic years 1958-59 and 1959-60.

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[1] A third special class, at the secondary level, was tried out informally in Burbank in 1957-59, but did not fully affiliate with the Project, and was discontinued due to local administrative conditions with other matters.

Phase III

Phase III. The continuance of Phase II with certain modifications during the academic year 1960-61. Four more special NH classes were formed.[1] The additional pupils were passed upon by local admission and discharge committees, not by the project Review Team. Control cases were not attempted. Purpose of this phase was to operate approximately 25 classes as a means of building a back-log of experienced personnel for future definitive research with larger numbers and better controls.

(An NH class was also operated in San Mateo during this Phase.)

"Pilot Project"

"The (Los Angeles County) Pilot Project for NH Children" was the term used for the study during Phase II, and hence a synonym for Phase II.

"R & D Program"

"The Research and Demonstration (R & D) Program for NH Children" was the term used for the study during Phase III, and hence a synonym for Phase III.

Phase II-A cases

Phase II-A cases are those admitted by the Review Team between June and December, 1958 and actually early enough attending either a special or a regular (contrast) class for <u>both</u> years of Phase II.

Phase II-B cases

Phase II-B cases are those similar to Phase II-A cases, except that they were admitted approximately one year later and therefore credited with <u>one</u> year of Phase II.

Criteria for Qualifying Cases

Criteria for cases

The criteria governing qualifications for cases admitted into the project are set forth in the form of June 5, 1958, adopted by the general committee and entitled:

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[1] A variant type of program was also formed in which an "itinerant teacher" traveled from school to school to help various NH children who otherwise remained in regular classes. An evaluation of this experience may be secured on request from Dr. Keith Hunsaker, Director, Southwest Area School Districts Cooperative Special Education Program, 11710 Cherry Avenue, Inglewood, California.

Minimal Criteria for Inclusion of Cases in the Study. It is presented as Form #26539 in the Appendix. Essentially, this sheet spells out in detail the criteria suggested six months earlier in the subcommittee report of December 19, 1957,[1] and calls for the following ten requirements:

1. A medical diagnosis of suspected or confirmed MH.
2. Difficulty in regular class, either in academic learning and/or in disinhibited behavior.
3. Requisite age and grade for the study.
4. Grossly 'normal' intelligence.
5. Grossly 'normal' vision.
6. Grossly 'normal' hearing.
7. Grossly 'normal' motor ability.
8. A 'discrepant pattern' of psychological abilities, good intermixed with poor.
9. Parental approval or request for admittance to the project.
10. Although not specifically stated on Form #26539, an EEG report was required in every case as part of the medical diagnostic procedure or medical history of requirement number 1 above. The aim was to gain some idea of the value of the EEG reports on mild MH cases.

Measures Utilized

The measures used in this study may be classed as falling into one of the three broad categories described below and designated 'operational' measures, tests and ratings, and medical findings.

Operational measures

By 'operational' measures is meant those measures, occurrences, indications or results which stem primarily from the actual operations conducted in this field study, and which do not involve the use of standardized or semi-standardized tests or ratings.

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[1] Form #26236C, dated December 23, 1957, Appendix.

Examples include such measures as the comparative numbers of pupils assigned to the special classes and the regular classes initially; the number of each which remained for various lengths of time; the number of teachers and parents from each group who were invited to programs or meetings, and the number who attended; the number of parents who objected to placing their children in the special classes, and so forth.

Tests and ratings

Tests and ratings include standardized or semi-standardized tests or forms constructed for purposes of testing or rating certain capacities, achievements, attitudes, tendencies, or behaviors. Examples of such measures used in this project include intelligence tests, perceptual tests, rating scales, opinionnaires, and similar instruments.

Medical findings

The medical findings are the results furnished by the medical re-evaluation team and consist of examinations, histories, laboratory tests, and other medical procedures.

Below are listed the main measures utilized during the course of the project.

Operational measures

1. Number of cases admitted by the Review Team
2. Number of cases assigned to special and regular classes
3. Number of boys versus girls admitted, assigned, etc.
4. Number of pupils previously given suspension, home instruction, reduced day, and so forth
5. Number of pupils remaining in contact with the study
6. Number of special class pupils going to regular classes after Phase III, etc.
7. Number of parents returning opinionnaires
8. Number of parents attending meetings
9. Number of teachers returning forms

10. Number of teachers attending meetings
11. Number of teachers (male and female) and years in the project
12. Number of school districts participating

Tests and Rating measures

1. Wechsler Intelligence Scale for Children (WISC)
2. Stanford Binet, 1937
3. Bender Visual-Motor Gestalt
4. Diamond Copying Test (Binet)
5. Goodenough Draw-A-Man
6. Behavior Rating Scale (Burks)
7. Parent Opinionnaire (Form #27539Mu, Appendix)
8. Child Opinionnaire (Form #28613, Appendix)
9. Harsh-Soeberg Survey of Primary Reading Development
10. Jastak-Bijou Wide Range Achievement Test
11. California Achievement Tests

Medical findings

1. Personal histories
2. Family histories
3. Pediatric examinations
4. Neurological examinations
5. Electro-encephalographic examinations
6. Other medical examinations

Procedures Followed

Some points of procedure have been alluded to or implied in earlier contexts. However, for the sake of clarity, convenience, and completeness, the main procedures of Phase II of the study (the phase known as the Los Angeles County Pilot Project for NH Children) are reported together in this chapter.

Overall responsibility for policy and direction of Phases II and III of the study was centered in a general

Policy and direction

committee composed of representatives from fifteen cooperating school districts. The committee met monthly for four years during these Phases. It was aided by standing subcommittees covering the work of 1) admissions, 2) public and semipublic programs and workshops, and 3) interpretation of the study. The latter subcommittee was activated in the latter half of Phase II.

Case sources referral testing examination

Candidates for the project were drawn from among the cases with which teachers, administrators, psychologists, nurses, and physicians had already been working in their local school districts. Of course it would have been highly desirable to precede the entire project or at least Phase II by a systematic survey of all cases which appeared to meet the definition of an NH child and the criteria for qualifying cases (Form #26539, Appendix).

Such a preceding study might have provided an answer to the pressing question of incidence. But time, personnel, and resources did not permit undertaking this important extra task.[1] Therefore, candidates were selected from elementary school children who had already been studied to some extent in the course of routine district operations. In the usual case, the teacher had given the child various achievement tests, had noted the child's learning difficulty or impulsive-hyperactive behavior, had filled out certain ratings and referral blanks, and had consulted with the principal. The principal had referred the child for further study by the school psychologist, school nurse, school physician, and wherever possible, the

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[1] A sizable survey or screening procedure for NH pupils was carried on in Centinela Valley, Los Angeles County, in 1956, by a subagency of six cooperating school systems known as the Southwest School Districts Special Education Program. Their results are presented with permission in the Appendix in a table dated June 12, 1956 (mimeo #25047). This survey did not attempt to develop definite figures on the rate of NH to be found per 100 pupils in the school population.

family physician. The family physician usually required orientation to the suspected MH condition by some other physician more familiar with it.

Initial and repeat EEGs

Initial EEGs, which were secured as a part of the case data on each subject (see section on criteria), were obtained from a variety of sources and paid for privately. One series of 25 initial EEGs was donated and performed at various schools by portable equipment set up in the nurse's office. Unfortunately an undetected electrical malfunction invalidated these records and they had to be discarded. If the initial EEG for a given case was available when the diagnosis was made it was taken into acoount along with other data. This was the case in about half of those seen by the Review Team. The EEG was not required to be positive in order for the pupil to be admitted to the project. Repeat EEGs, given later as part of the medical re-evaluation, were furnished through the State Department of Health at one of three hospitals.

Coordination of case work

The work of coordinating the tests, examinations, and interviews needed to prepare the case for admission to the study usually fell to the guidance director or school psychologist for the district. In some districts a curriculum expert or a psychiatric social worker carried this responsibility.

Parents request admission

Parents requested admittance for their children either in writing or informally through various school personnel including the school principal. It was made clear to the parents, by the psychologist or others, that admission was to the project, rather than to a specific class. This was necessary in order that when possible the child could be assigned by chance to either a special or a regular class without running counter to the parents' expectations.

Admitting team personnel

Cases prepared in the districts were reviewed and admitted, deferred for further data, or eliminated by a five-man Review Team. The personnel of the team included:

one physician with special interest in pediatrics and NM problems (Dr. Zike); one specialist in education for children with cerebral palsy and other physical handicaps (Mrs. Gore); and three guidance specialists holding the school psychologist credential (Dr. Burks, Dr. Howe, and Dr. Jones).

Full agreement required

Cases were not admitted unless there was unanimous agreement among the reviewers present at the meeting. Agreement was attested by their signatures on at least one copy of the Worksheet described immediately below. All members of the Review Team attended each meeting except in cases of illness or emergency. There were several meetings at which four members were present, but none with fewer than three, covering each professional viewpoint, medical, psychological, and educational. When the unanimous agreement had been obtained, the case was admitted and assigned the next ordinal case number. If agreement was not unanimous, the case was either eliminated, or post-poned if further data was needed.

Procedures used by admitting team

The Review Team held a total of approximately fifteen meetings in nine different locations. Most of these sessions took place in the last week of May and the month of June, 1958. At first the business of reviewing all the aspects on each case went very slowly. Only three cases were handled at the first afternoon's session. This was followed by a rate of three per hour for the next few sessions. Ultimately, it was found that familiarity with the task speeded up the process. Also it was found that a great deal of time was saved by adopting a definite worksheet for presenting the data in an orderly and standard sequence, and by preparing this sheet in quintuplicate. This provided each of the five reviewers with a visual record of the data to which he could continually refer as the case was presented by the local district psychologist. This form, called the Review Team Worksheet, helped the reviewers keep the constellation

of findings in mind, to see the interrelations of the data, and to discuss the various aspects of the case prior to making a judgment for or against admittance. A sample of the Review Team Worksheet appears in the Appendix, Form #26521Mu (Rev.).

Assignment to special or regular classes

In principle, cases were admitted first to the project and subsequently were assigned either to special or regular class. Contrary to principle, however, in many instances it was recognized that admission to the project was tantamount to placement in a special class. This was true for the reasons given in the next two paragraphs.

Influences on assignments

So few districts and workers were aware of or actually working on the NH problem in 1958 that in order to secure enough cases to conduct the study at all it was necessary to accept them from several small districts where sufficient numbers did not exist to permit assigning half of them to special class and half to regular class by chance alone. In the small districts all the cases had to be assigned to the special class or there would not have been enough special classes. In one instance where distances and working relationships permitted several districts to pool their facilities, enough cases were studied and admitted to permit random assignment to special or regular class. (Southwest School Districts. See mimeographed summary of their survey of June 12, 1956, reproduced with permission in the Appendix, #25047.)

Severity influences assignment

Another factor also tended to influence assignment to special or regular class. This was the factor of severity of the case. District workers tended to have at hand more data on their severest cases. Many of the children, presented to the Review Team, either had already been suspended, exempted or excluded from regular school classes, given a home teacher, and so forth. If these alternatives had not yet been tried, they were being considered for many of the cases presented. An attempt was made to check on this factor at the end of Phase II. All district psychologists were asked to make a tally of the children in both regular and special classes who were

subject to restriction from regular class on account of repeated hyperactive disturbing behavior. Restriction from regular class was defined in this context as suspension, exclusion, having a home teacher, or being allowed to attend only part of a day. The psychologists were asked to further specify 1) whether such restriction had actually taken place prior to study by the Review Team, or 2) whether such restriction was under consideration at the time the case data were presented to the Review Team.

Thus the procedure for admitting cases to the study and assigning them to the special or regular class group was unavoidably subject to bias. The extent of this bias is reported later in the chapter on results.

Each teacher of a special or regular class group receiving a project child was mailed confidential notice of the child's diagnosis and an explanation of the purpose of the project. The teachers were asked to acknowledge this notice by filling out and returning a detachable portion of it.

Orientation for teachers

In order to make conditions as favorable as possible for pupils in the regular classes, as well as in the special classes, teachers of both kinds of classes received identical notices by mail, inviting and encouraging them to attend a continuing series of meetings. These included a three-day conference at the opening of the school year, September, 1958, and a two-day conference in September, 1959; monthly meetings in or near their own area; and quarterly evening meetings in downtown Los Angeles (California Teachers Association Building, 1125 West Sixth Street).

Orientation for parents

Paralleling the orientation for teachers, a similar program was offered for parents of children from both special and regular classes. Local monthly meetings were offered, usually in each of the schools where there was a special class. Notices for these meetings were sent to regular and special class parents either by the local

school districts or by the Los Angeles County Schools Office. In two districts the local parents' groups met approximately monthly in the homes of their members rather than at school. In one of these districts the parents went to the extent of pooling contributions and hiring a group therapist for several months. In other districts there was little or no local parent activity.

All parents of project children also received mailed notices of the general quarterly meetings in downtown Los Angeles. The program for the quarterly meetings was always of an inter-disciplinary nature. Four speakers were always secured to represent the four disciplines: parenthood, education, psychology, and medicine. At each meeting, prepared half-hour talks were given in <u>two</u> of these disciplines, one of which was always the parental. The other two speakers then reacted briefly to the talks. All four speakers then participated in questions and discussion from the floor.

Monthly samples of pupil's work

As of approximately January, 1958, a monthly sample of work was requested from the teacher of each pupil covering each of three subject areas: written language, mathematics, and drawings (in color and in black and white). (See request forms, #27226 A, B, C, D (Rev.), in Appendix.) The teacher either selected a) one production of each kind which was representative (average) of the child's work for the month, or else b) those which were the best and the poorest the child had done for the month. These samples were collected by the local district school psychologists and turned in to the County Schools Office for filing and later interpretation. Some teachers also kept brief daily journals of children's activities and behaviors.

Monthly medicine report

Monthly records of medication, if any, were requested from the parents in order to permit some judgment as to the effect of medical treatment. (Only a few children

appeared to be receiving medication, and only a few parents or school nurses returned the information blank.)

Annual retests

At the beginning of the project and at the end of the first and second years standardized achievement tests, intelligence tests, perceptual tests, and rating scales were requested to be readministered. Some districts found it impossible with their limited personnel to comply with this schedule of repeated testing. Lack of full and systematically repeated data constituted a serious limitation.

Terminal ratings of ideal and actual placements

At the end of Phase III an attempt was made to determine the theoretically ideal educational placement for each pupil who had been in the project for three years. For this purpose forms were prepared, mimeos #30032, and 30022-B in the Appendix, and sent to the district psychologists. By this time Phase III (the Research and Demonstration Project) had terminated, and a number of the special classes had to be discontinued for financial reasons. Also many of the pupils had reached the ages of usual attendance at secondary schools. With all these factors affecting actual placement, the psychologists were asked to indicate their opinions of the <u>theoretically</u> ideal or optimal placement as well as probable actual placement for each child for the ensuing year.

Samples of parent opinion

At the end of each year of Phase II parents of special class and contrast class cases were asked for their opinions about their children. Such topics were included as the following: the child's characteristic behaviors, assets, weaknesses; how the parents felt about these; what changes if any they noted in the current year as compared with the previous one; ways parents had found effective for handling certain situations; and similar items. This attempt utilized an opinionnaire developed by a subcommittee (Burks, Jones, Howe) with assistance from others. The opinionnaire is reproduced in the Appendix, Form #27539Mu.

The opinionnaires were distributed to the parents at the end of the fourth year (first year of Phase II) by the district psychologists, who also were responsible for collecting them or seeing that they were mailed to the coordinator's office. At the end of the fifth year the opinionnaires were mailed directly from the coordinator's office with return mail envelopes furnished. Two questionnaires were enclosed in case parents had differences of opinion.

Samples of child opinion

An attempt was also made at the end of each year of Phase II to sample the opinions of the pupils in special classes concerning themselves and their special placements. Regular class pupils were not sampled since their placements were not unusual, and because their scattered classes could not be reached by the limited personnel available. The subcommittee (Burks, Jones, Howe, Mooring, et al) charged with the task decided to utilize a guided interview. A child opinionnaire was developed for this purpose. It borrowed heavily from a previous one developed by Mooring (1960). It is reproduced in the Appendix, Form #28613. The subcommittee members used this form to interview all the special class pupils they could reach during the last week of each of the two school years. The pupil's answers were entered briefly on the forms. A standard set of explanations and instructions was memorized by each interviewer and repeated to each pupil prior to his interview.

Initial examinations

Initial medical examinations and diagnoses were obtained wherever possible, starting first with the family physician. Many family physicians were not oriented to the problem and an attempt was made to have a well-informed physician speak to them. Prior to Phase II a series of three meetings were held in different locations of the county to which interested physicians were invited, and at which informed physicians made presentations and answered questions. Brief write-ups of the proposed project

were distributed at these meetings and elsewhere. In some instances family physicians were telephoned by informed school physicians.

Repeat medical evaluations

During the second year of Phase II (academic year 1959-60) the Bureau of Crippled Children's Services, State Department of Public Health supplied a medical re-evaluation of each child in Phase II of the study. A five-page mimeographed directive covering the procedures for the medical recheck was drawn up on March 9, 1959 by Virgil Hanson, M.D., Director of the Los Angeles District Office of the Bureau. It is included as Form #27424 in the Appendix. The Bureau furnished the part-time services of two examining physicians, Dr. Robert P. Sedgwick and Dr. Kenneth Z. Zike, specialists respectively in neurology and pediatrics.

The physicians examined each child at his own or a nearby school, and in the presence of one or both parents. At this time the physicians jointly obtained from the parent(s) a fresh medical history. For these purposes half-day clinics were scheduled once each week. Usually three children's cases were seen during each half day. Repeat EEGs were ordered by the physicians at this time for all cases. Any additional special medical examination which seemed advisable for a given case was also ordered. Appointments were made by phone while the parent was still present. Later the parents took the children to one of three medical facilities for the EEG appointments, or elsewhere for special examinations.

Limitations and Delimitations

Limitations

As mentioned or implied elsewhere in this report, this field study suffers from numerous limitations. Chief among these are:

1. Lack of a detailed initial design.

2. Lack of a preceding study to survey incidence, and to locate a reservoir of cases.

3. A relatively small total number of cases, not permitting use of many subgroups to explore various factors separately.

4. Lack of systematic selection or equating of the two main subgroups (special and regular classes) to control various factors, such as age, sex, symptoms, severity, IQ, socio-economic and ethnic factors. For example, as mentioned in the procedures, it was known in a number of cases that if the child were not placed in special classes he was due for suspension from school.

5. Lack of identical or uniform examinations, examiners, and times and conditions for examining.

6. Lack of employment of a single or perhaps several specifically recognized and contrasting teaching methods, administered to the same extent and by teachers of equal ability and experience.

7. Lack of planned and systematically administered or recorded medical treatment for all cases

8. Lack of full and complete data on each case.

Delimitations

This study was delimited to include only those NH cases <u>not</u> already provided for elsewhere in public schools in California by other special education programs such as the mentally retarded, cerebral palsied, visually handicapped, hearing handicapped, metabolically or otherwise physically handicapped (severely epileptic, low vitality, endocrine dysfunction, and so forth). The rationale for this delimitation was two-fold: First, since the other handicaps mentioned were already receiving some attention, the need for studying children with NH seemed relatively greater. Second, it seemed wisest at this time to study the needs of NH children who were relatively free of other conditions which might further cloud the issues and results.

Another delimitation agreed upon by all participants provided that no child would be moved from a regular class-

room to a special class unless there was evidence that he was already experiencing sufficient difficulty in the regular class to warrant the move. This delimitation was agreed upon because of recognition that unusual placement can in itself constitute some hazard to a child's self-concept and is only justified if it appears to be the lesser of two undesirable conditions. This proviso was kept constantly in mind by the Review Team when admitting cases to the program.

Chapter V

FINDINGS

The major findings of this six-year field study are reported in this chapter. They are presented here with a minimum of interpretations, corrections for possible uncontrolled factors, or speculations on long-term implications. Such discussion is provided in following chapters.

The order in which the results are presented follows in general the order of the list of measures given in the preceding chapter. Accordingly, the findings are considered under three main headings; operational results, tests and ratings, and medical findings.

Operational Results

1. Numbers of districts, classes and pupils

Phase I, districts 2, classes 2, pupils 30 (approximate)

In Phase I, the first three years of the study, one district, San Gabriel, operated the first special class for three years; another district, Palos Verdes, operated the second special class and a contrast group for two years. In this phase approximately thirty pupils were observed. The San Gabriel class was reported in mimeographs by H. F. Burks and by H. A. Smith. The Palos Verdes results were reported in a doctoral dissertation by Mooring (1960).

In Phase II, the fourth and fifth years of the study, fifteen districts participated. Some were members of two cooperative special education areas, others were not. Including those continued from Phase I, eight special NH classes were conducted.

In Phase III, the sixth year of the study, two additional districts participated making a total of seventeen. Of the eight existing special classes, seven were continued. The discontinued class was in a small district where four of the pupils had returned to regular classes upon

Phase III districts 17 classes 13

recommendation of the principal and the remaining two children transferred to the special class in a neighboring district. Six more special classes were added making a total of thirteen. They were distributed as follows: one cooperating area added two more classes; the other cooperating area added one more class; one participating district added one more class, and two districts new to the program each opened one class.

Phase II-A N=116

In the fourth year of the study, a total of 116 cases were admitted by the Review Team early enough to be credited with or eligible for two years attendance in a special or contrast class during Phase II. These are the Phase II-A cases (see section on Definitions). Of these, 94 were admitted before the opening of the school year (1958-59); 19 more were admitted within the first month of school; and the remaining 3 by the end of the fourth month of school.

Phase II-A cases are major group

These 116 constitute the 'major group' of cases in the study for the following reasons: 1) they received or were eligible for at least three years of study (two years in Phase II as originally planned, and one additional year in Phase III); 2) all of them were admitted by action of the Review Team; and, 3) they constituted the cases for which the maximal amount of data could be acquired.

Phase II-B N=24

In the fifth year of the study (second year of Phase II) twenty-four additional cases were also admitted by the Review Team. This was done in order to augment the size of the <u>regular</u> class group, into which most (20) of the additional cases were placed. As shown in a later paragraph, they were a milder group, and contained a larger proportion of girls' cases. Since this Phase II-B group is not fully comparable, is very small, and was eligible for only two years' study (one in Phase II and one in Phase III), unless otherwise indicated, all figures in this chapter are based on the 116 Phase II-A Cases only.

The above figures for all Phase II cases are summarized in Table 4.1 below. For the convenience of those participating districts which may be continuing to study and to collect data on these cases, the actual case numbers falling into the various categories of this table are listed in the Appendix.

TABLE 4.1

NUMBER OF PHASE II CASES PLACED IN SPECIAL AND REGULAR CLASSES

Group	Special	Regular	Subtotal
Phase II-A	64*	52	116
Phase II-B	4	20	24
		Total	140

* Includes three cases who attended five months or less.

Table 4.1 shows that for the main body of cases in the study (Phase II-A cases) the special class subgroup and the regular class subgroup were roughly equal in size and each numbered more than fifty cases (64 and 52 respectively).

2. Sex Differences

Sex differences

The numbers and ratios of boys versus girls admitted to Phase II is shown in Table 4.2.

TABLE 4.2

NUMBERS AND RATIOS OF BOYS VERSUS GIRLS ADMITTED TO PHASE II

Group	Totals	Boys	Girls	Ratios
Phase II-A	116	103	13	8:1
Phase II-B	24	19	5	4:1
Combined	140	122	18	6.8:1

Sex ratios of the classes

Table 4.2 shows that in all admissions to Phase II boys clearly outnumbered girls in a ratio reaching as high as about 8:1 in the Phase II-A group and 4:1 in the Phase II-B group.

The numbers and ratios of boys versus girls attending special and regular classes during Phase II are shown below in Table 4.3.

TABLE 4.3

NUMBERS AND RATIOS OF BOYS VERSUS GIRLS ATTENDING SPECIAL AND REGULAR CLASSES IN PHASE II

Group	Class	Boys	Girls	Ratios
Phase II-A	Special	60	4	15:1
	Regular	43	9	4.7:1
	(Sub-total)	(103)	(13)	
Phase II-B	Special	5	0	
	Regular	14	5	2.8:1
	(Sub-total)	(19)	(5)	
	Grand total	122	18	6.8:1

Table 4.3 shows that in placing the Phase II-A pupils, fifteen times as many boys were placed in special classes as compared to girls. In the Phase II-A regular classes, the boys also outnumbered the firls, but the ratio was only about five (4.7) to one. In the Phase II-B regular class placements the ratio was approximately three boys (2.8) to one girl.

3. Age Differences

The special class group and the regular class group were also different with respect to average ages. The differences are summarized in Table 4.4 below.

TABLE 4.4

AGES OF PHASE II-A PUPILS AS OF THE BEGINNING OF PHASE II (SEPTEMBER, 1958)

Group	N	M	S.D.
Special Class	64	9.66 yrs.	2.2 yrs.
Regular Class	52	9.05 yrs.	1.4 yrs.

Average ages: Specials, 9.6, Regulars, 9.0

Table 4.4 shows that the special class group was the older group by an average of one-half (.6) year. This is the equivalent of a full semester of school age. At the beginning of Phase II (September, 1958), the average for the special class group was approximately nine and a half years; for the regular class group, the average age was approximately nine years. At the end of Phase III (June, 1961), thirty-three months later, the respective averages, of course, were about twelve years, three months; and eleven years, nine months.

4. Behavior Differences

More hyper-impulsives in special classes

At the conclusion of Phase II, the district psychologists were asked to make a tally of the children in both regular and special class groups who previously had been given some form of modified program (other than full time attendance in regular class) on account of hyperactive disturbing behavior, or who were being considered for such action by the school at the time of admission to the study. The figures from this survey are given in Table 4.5 which follows.

TABLE 4.5

CHILDREN OF PHASE II-A (N=116) WHO HAD BEEN PREVIOUSLY GIVEN A MODIFIED* PROGRAM OR WERE BEING CONSIDERED FOR ONE AT THE TIME OF ADMISSION BY THE REVIEW TEAM

	Class Group		Total
	Special (N = 64)	Regular (N = 52)	(N = 116)
Previously Modified	21	7	28
"Being Considered"	8	1	9
Totals	29	8	37
Percents	45.3%	15.3%	31.8%
Standard Errors	2.0%	5.0%	4.2%

* "Modified" is defined here as suspended, excluded, given a home teacher, or allowed to attend regular class only part of the day because of repeated hyperactive disturbing behavior.

The difference between the percentages for the special and regular class groups (45.3% - 15.3%) is significant at greater than the .001 level.

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From Table 4.5 it can be seen that for the admitted group as a whole (N = 116) about one-third (31%) either had been or were likely to be out of regular classes for various periods of time, and placed into various modified programs.

More irregular programs in the special class group

Nearly one-half (45.3%) of the special class group were cases of such actual or potential modification. And nearly one-sixth (15.3%) of the regular class group were similar cases. Thus, the special class group contained about three times as many cases of actual or potential modification as did the regular class group (29 versus 8 or 45.3% versus 15.3%). This difference is significant at greater than the .001 level of confidence. As was

pointed out in the section on procedures, the Review Team realized that factors other than chance were operating in assignments to special classes.

It is further seen in Table 4.5 that most of the modification cases were not merely potential, but had actually already occurred (28 "previously modified" cases, 9 "being considered").

5. Steadiness Versus Mobility in Pupils' Attendance

In Table 4.6 which follows, figures are given to show for the two subgroups the extent to which attendance remained steady or was marked by movement of cases during the two year period of Phase II. The table shows for each group the number of cases which manifested the following conditions: A) maintained steady attendance in the same school district for two years or more; B) moved to another school district, but were followable (contactible) for two years; C) were withdrawn from the project at the request of the parent; D) were institutionalized either in a mental hospital or in an institution for juvenile delinquents; or E) moved away to another school district and lost contact (could not be found or followed by the study).

Steadiness versus mobility in pupils' attendance

TABLE 4.6

ATTENDANCE, CONTACTABILITY AND MOVEMENT OF CASES ORIGINALLY ASSIGNED TO SPECIAL AND REGULAR CLASSES FOR THE TWO YEARS OF PHASE II-A

Category	Special Classes (N=64)		Regular Classes (N=52)	
	N	%	N	%
1. Total contactible for 2 yrs.	58	90.5	31	59.6
A. Steady attendance for two years or more	55	86	21	40.4
B. Contactible two years but moved to other school district	1	1.5	4	7.9
C. Contactible two years but withdrawn by parents from study	2*	3.1	3	4.7
D. Contactible two years but institutionalized	0		4	7.9
2. Moved and not contactible	6	9.5	21	40.4

* An additional case was withdrawn after eleven months in the program but returned by the parents to special class at the end of the second year.

Attendance much steadier in the special classes

Table 4.6 shows that steady attendance for two or more years was much higher in the special class group than in the regular class group (86 percent versus 40 percent). Most of the movement that did take place consisted of families moving away to other school districts where they were not contactible. No analysis or correction has been applied to these figures to take into account the possible influence of different rates of movement prevalent in different districts. Discussion of this as well as other possible factors is presented in the following chapter.

Table 4.6 also shows that four cases were institutionalized in the two years of Phase II. Two of these were sent to the state youth authority and two to a state hospital. All four came from the regular classes, none from the special classes.

6. Placements at End of Phase III

An attempt was made at the end of Phase III to study the progress of the children in terms of the educational placements which would be theoretically optimal for them in the forthcoming year. (See procedures; and forms 30032 and 30022B in Appendix.) The results for all Phase II-A cases reported by the district psychologists and teachers are given in Table 4.7 below.

TABLE 4.7

THEORETICALLY OPTIMAL PLACEMENT OF PHASE II-A CASES AFTER THREE YEARS, BASED ON RECOMMENDATIONS OF DISTRICT PSYCHOLOGISTS AND TEACHERS

Subgroup	Theoretically Optimal Placement			Cases Reported but Recommendation Missing	Totals
	Regular Full time	Special NH Full time	Special NH Part time		
Special Class (Original N=64)	12	4	3	3	22
Regular Class (Original N=52)	4	8	7	5	24
					46

From Table 4.7 it is seen that more special class children were rated as being optimally placed in full time regular classes than in special classes for part or full time (12 versus 7). The reverse is indicated for the contrasting regular class children (4 versus 15).

The data reported in Table 4.7 are available for only 46 of the total of 116 children in the Phase II-A group. Thus the reported cases constitute only about 40 percent of the entire group. It is cautioned here, as well as in the discussion in the next chapter, that this sample is small and perhaps biased. It is also possible, of course, that factors other than those theoretically optimal for the child may have influenced those who reported.

7. Numbers of Parents Responding and Teachers' Responses

Parent attendance at meetings

Parents of all pupils admitted to the program were mailed invitations to attend the Quarterly Inter-Disciplinary Meetings held in downtown Los Angeles during Phase II. Table 4.8 below shows the attendance at such meetings by parents of the special class pupils as compared with those of the regular class pupils.

TABLE 4.8

NUMBERS OF FAMILIES OF SPECIAL CLASS AND REGULAR CLASS PUPILS TO WHOM NOTICES OF QUARTERLY INTER-DISCIPLINARY MEETINGS WERE MAILED FOR TWO YEARS (PHASE II) AND WHO ATTENDED ONE OR MORE SUCH MEETINGS

	Special Class	Regular Class
Families originally in each group	64	52
Notices mailed for two years	62	41
Families attending one or more QI-D meetings in two years	32 (51.6% of 62)	3 (7.3% of 41)

Of those families to whom notices of quarterly meetings were continuously mailed over a two year period, Table 4.8 shows that approximately half (51.6%) of those families whose children were in special class

attended one or more meetings. By comparison, only about one-fourteenth (7.3%) of those families whose children were in regular classes attended such meetings. Some correction for district turn-over or other factors is present in these percentages since they were calculated not upon the original numbers in each sub-group but upon those which remained contactible for the two years.

Parent return of opinion-naires

At the end of each year of Phase II parents were asked to fill out and return an opinionnaire (see form #27539 in Appendix). The number of opinionnaires returned by the parents of the special class children as compared with parents of the regular class children is shown in Table 4.9 below.

TABLE 4.9

NUMBERS OF FAMILIES OF SPECIAL CLASS AND REGULAR CLASS PUPILS WHO RETURNED OPINIONNAIRES DURING THE FOURTH AND FIFTH YEARS (PHASE II)

	Special Class	Regular Class
Families originally in each group	64	52
Families receiving opinionnaires		
Fourth year	62*	45*
Fifth year	62	41
Total opinionnaires returned	76	37

* These are estimates since opinionnaires were distributed by hand to parents by local school personnel in the fourth year, whereas in the fifth year, they were mailed by coordinator.

From Table 4.9 it is seen that the rate of return of opinionnaires was higher for the families of special class pupils than for families of regular class pupils.

The average rates of return for these two groups respectively was 1¼ opinionnaires and 4/5 opinionnaires per family over the two year period.[1]

Teachers' return of notices

Teachers of both special and regular classes were asked during Phase II to acknowledge confidential notices that project children had been assigned to their classes. (See form letter in Appendix.) Following is a table showing for each of the two years the numbers of those teachers who complied.

TABLE 4.10

TEACHERS WHO ACKNOWLEDGED RECEIPT OF CONFIDENTIAL NOTICE

School Year	Special Classes	Regular Classes
1958-59	8 out of 8 (100%)	31 out of 52 (59%)
1959-60	8 out of 8 (100%)	35 out of 68* (51%)

* Includes teachers of both Phase II-A and Phase II-B pupils.

The above table shows that for both years of Phase II teacher response was complete in the special classes but only approximately half complete (59% and 51%) in the regular classes.

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[1] After the close of Phase II parents of project children spontaneously formed a nonprofit association for the purpose of disseminating information to parents, educators, and physicians on problems of NH management, education, diagnosis and treatment. This organization, known as the California Association for Neurologically Handicapped Children, printed and distributed a leaflet, a sample of which is included in the Appendix. The association also requested its members to write up their own 'family case histories' covering such topics as how their NH child seemed to differ from other children; problems in securing medical diagnosis and treatment; and problems encountered in securing education for the child. From 27 written histories turned in to the Association's editorial committee, a number were edited and published in a pamphlet of twenty pages. A sample pamphlet is obtainable on request from the California Association for Neurologically Handicapped Children, Box 604, Main Post Office, Los Angeles 53, California.

Teachers continuance with NH classes

Data on whether male or female teachers continued as instructors of the special NH classes more steadily is provided by Table 4.11 which shows the changes in personnel which took place during Phases II and III.

TABLE 4.11

NUMBER AND SEX OF SPECIAL CLASS TEACHERS
PHASES II AND III

District	Class	Phase II 1958-59	Phase II 1959-60	Phase III 1960-61
A		man	same	woman
B				man
C		man	woman	woman (new)
D	first second	woman	man	same man
E	first second third (itinerant)	man	same	same man * (transfer) woman
F		man	same	same
G	first second	man	same*	woman woman
H		woman	man	discontinued
I		woman	man	same
J				man

* This man transferred at the end of Phase II from District G to E in order to continue teaching special NH class and to open a private part-time school for NH children in the late afternoons.

It is seen that all three of the women who started in 1958-59 were replaced by men in 1959-60. Also the only woman in 1959-60 was replaced by a new person, another woman for 1960-61. Thus it turned out that

no woman taught an NH class for the scheduled two years of Phase II. On the other hand, four men did teach those two years. Of these four men, three signed contracts to teach NH classes for the third year also (Phase III), including one man who transferred to another district for this purpose.

Special teachers' verbal opinions

Formal data are lacking on the difficulties teachers encountered in instructing NH classes. However, in conversations with the coordinator special class teachers, male and female, indicated that teaching such a class was more arduous than their previous teaching in regular classes. In the teacher's words, the arduousness was attributed almost invariably first to "hyperactivity" and second to "slow learning." All of the teachers in Phase II were experienced teachers with tenure in their districts.

Tests, Ratings, and Opinionnaires

1. WISC Intelligence Test

WISC IQ results

At least one initial intelligence test and one retest was attempted for all Phase II children. In most instances the test used was the WISC (Wechsler Intelligence Scale for Children, 1949) although in some cases the 1937 Stanford-Binet had already been given and was accepted as an alternate. In all there were 59 special class and 43 regular class pupils for whom an initial WISC was available. The results are shown in Table 4.12 below.

TABLE 4.12

MEANS, RANGES AND STANDARD DEVIATIONS ON THE VERBAL, PERFORMANCE AND FULL SCALE IQS OF THE WISC FOR FIFTY-NINE SPECIAL AND FORTY REGULAR CLASS PUPILS ADMITTED TO PHASE II-A

Group	N	M	S.D.	Range
		Verbal I.Q.		
Special Class	59	94.31	11.78	72-131
Regular Class	43	91.85	10.13	70-113
Total Group	102	93.31	11.26	70-131
		Performance I.Q.		
Special Class	59	91.54	14.23	62-128
Regular Class	43	92.30	10.95	74-121
Total Group	102	91.85	13.00	62-128
		Full Scale I.Q.		
Special Class	59	92.51	11.08	76-127
Regular Class	43	91.53	9.49	80-116
Total Group	102	92.11	10.51	76-127

Average IQ is low normal

The results in Table 4.12 show that of the pupils admitted to Phase II, on the average the Verbal, Performance and Full Scale IQ were in the low normal range (low nineties) not in the mentally retarded range.

Some pupils had an IQ score below 80 on either the Verbal portion of the test, or on the Performance portion of the test. But on the Full Scale, there were only three cases with an IQ lower than 80. They were admitted because they had also been given a Binet which had yielded a higher IQ, and it was believed that the WISC score was spuriously low. None of these cases were in the regular class group.

Special and regular IQs similar

The averages for the special class and regular class groups were quite similar. They differed by less than one point on the Full Scale IQs. For the regular class group there was also less than one point of difference between the Verbal average and the Performance average. For the special class group, however, this difference amounted to almost three points, and it was in favor of the Verbal section (94.31 and 91.54). The special class group also had cases which were more extreme and more numerous both at the high and at the low end of its range. Therefore it also had the larger standard deviations. A standard deviation of 10 points is normal on the WISC. Actually the standard deviations approached this value quite closely. A notable exception is the standard deviation of 14.23 for the special class group on the Performance section.

Pattern of sub-test scores for 'organics'

The question of whether there is a characteristic pattern of high and low subtests on the WISC for pupils presumably having organic brain handicaps was explored. Table 4.13 shows for each WISC sub-test the mean scale score earned by the Phase II pupils. The standard deviations of these scale scores are also included. For the Digit Span sub-test the mean <u>raw</u> scores are also given and these show the number of digits which the group as a whole could repeat forward as compared with backward.

TABLE 4.13

SCALE SCORES ON SUBTESTS--
FOR 102 PHASE II- CHILDREN
HAVING AN INIT..AL WISC

INITIAL TEST

	Special Class			Regular Class			Total Group		
	N	M	S.D.	N	M	S.D.	N	M	S.D.
Verbal Sub-tests									
Information	59	8.92	2.71	43	8.12	2.27	102	8.53	2.58
Comprehension	59	10.07	3.12	43	10.40	3.04	102	10.21	3.11
Arithmetic	59	7.53	2.47	43	8.12	1.76	102	7.77	1.50
Similarities	59	8.88	2.45	43	8.33	2.52	102	8.65	2.50
Vocabulary	53*	10.13	2.84	35*	9.69	2.86	88*	9.95	2.86
Digit Span	52*	8.33	2.19	38*	8.11	2.10	90*	8.22	2.15
Digits Forward**	46*	4.87	1.01	38*	4.45	1.21	84*	4.68	1.13
Digits Backward**	46*	2.67	1.19	38*	2.76	0.90	84*	2.71	1.07
Performance Sub-tests									
Picture Completion	59	9.98	2.75	43	9.21	2.86	102	9.66	2.82
Picture Arrangement	59	9.20	2.79	41*	9.20	2.91	100*	9.20	2.84
Blocks Design	58*	9.10	3.31	43	8.33	2.63	101*	8.77	3.06
Object Assemb.	54*	8.83	2.86	41*	10.27	2.25	95*	9.45	2.71
Coding	59	7.41	3.09	43	8.12	2.68	102	7.71	2.95
Mazes	(7)*	(6.57)	--	(6)*	9.33	--	(13)*	(8.08)	--

* N differs in these sub-tests because some sub-tests were omitted from some IQ examinations.

** Scores on these sub-components of the Digit Span Sub-Test are not scale scores, but raw scores.

() Included merely for completeness of record; sample size obviously inadequate.

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In Table 4.13 trends toward relatively lower scale scores are visible on three subtests. They are Arithmetic, Digit Span, and Coding. Three other subtests show a trend toward relatively higher scale scores. They are Comprehension, Vocabulary and Picture Completion. Also to be noted is the discrepancy between the raw scores showing the number of digits pupils could repeat forward as compared with the number they could repeat backward. On the average, this discrepancy was greater than two digits (4.87 and 2.67). Possible interpretations of these results are discussed in the next chapter.

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Table 4.14 extends the data in Table 4.13 to shed a little light on how the Phase II children scored on various WISC subtests when retested one or more times, at intervals of one, two, or more years. Except at the two year interval for special class cases where data was available for 22 cases, the figures are based on fewer than nine cases and have little value. They are included merely for completeness of the record.

TABLE 4.14

SPECIAL CLASS: PUPILS' SCORES ON WISC SUBTESTS AT YEARLY RETEST INTERVALS

	Information	Comprehension	Arithmetic	Similarities	Vocabulary	Digit Span	Digits Forward*	Digits Backward*	Picture Complete	Picture Arrange	Block Design	Object Assembly	Coding	Mazes	Verbal IQ	Performance IQ	Full Scale IQ
ONE YEAR INTERVAL																	
N	6	6	6	6	5	5	3	3	6	5	6	5	6	-	6	6	6
Initial M	11.7	12.2	9.2	10.3	13.0	8.8	4.7	2.7	11.5	11.4	11.2	10.4	8.2	-	108.8	105.2	107.8
Retest M	10.0	11.8	10.0	10.8	12.6	9.4	4.7	3.3	10.5	11.0	11.3	12.2	8.3	-	106.2	104.2	106.0
TWO YEAR INTERVAL																	
N	22	22	22	22	21	16	14	14	22	22	22	19	22	5	22	22	22
Initial M	8.3	9.8	7.5	9.5	9.7	8.3	5.1	3.0	9.8	10.1	8.9	9.2	8.0	6.6	93.1	93.0	92.7
S.D.	2.8	3.0	2.1	3.0	3.6	2.1	.8	.4	2.7	2.7	2.7	2.6	2.8	1.6	14.0	11.5	9.8
Retest M	7.7	8.9	7.8	9.1	9.1	8.9	5.4	3.6	9.7	10.2	8.8	10.1	8.2	9.2	89.6	96.0	92.0
S.D.	2.2	3.0	2.7	3.5	3.4	2.2	1.3	1.0	2.4	3.3	3.0	3.1	3.1	1.8	13.9	11.6	12.1
THREE YEAR INTERVAL																	
N	9	9	9	9	8	8	6	6	9	9	9	8	9	-	8	8	8
Initial M	8.4	11.0	8.0	8.9	10.3	8.8	5.5	1.8	9.1	9.3	10.3	10.6	7.1	-	84.4	86.9	85.3
Retest M	8.7	9.9	7.9	9.3	8.5	9.4	5.3	3.3	11.3	10.8	11.1	11.3	7.2	-	83.8	91.2	87.1
FOUR YEAR INTERVAL																	
N	8	8	8	8	6	6	5	5	8	8	8	8	8	-	7	7	7
Initial M	9.4	11.4	7.6	7.6	9.6	7.8	5.4	2.6	9.6	8.6	8.5	9.6	7.5	-	96.9	92.0	93.0
Retest M	9.6	9.4	9.1	9.8	9.6	9.3	6.2	3.6	11.3	9.4	9.8	10.1	7.4	-	97.4	96.3	97.9

* NOTE: These are raw scores, not scale scores.

TABLE 4.14 (Continued)

REGULAR CLASS: PUPILS SCORES ON WISC SUBTESTS BY YEARLY DIFFERENCE INTERVALS

	Information	Comprehension	Arithmetic	Similarities	Vocabulary	Digit Span	Picture Complete	Picture Arrange	Block Design	Object Assembly	Coding
ONE YEAR INTERVAL											
N	3	3	3	3	3		3	3	3	3	3
Initial M	6.7	7.3	7.3	9.7	6.7		7.0	8.7	10.0	10.7	7.7
Retest M	7.0	6.0	6.7	6.0	6.0		7.7	9.7	12.0	8.3	7.7
TWO YEAR INTERVAL											
N	5	5	5	5	5		5	5	5	5	5
Initial M	7.2	10.6	6.6	8.8	9.4		8.4	8.4	9.6	10.2	7.2
Retest M	7.2	9.2	7.4	8.6	7.6		8.0	9.2	9.8	10.0	8.2
THREE YEAR INTERVAL											
N	5	5	5	5	5	5	5	5	5	5	5
Initial M	8.6	10.6	6.4	8.8	9.8	9.0	8.4	7.6	8.4	9.2	8.2
Retest M	8.2	8.8	7.4	8.8	7.2	7.0	9.8	9.2	8.6	8.4	6.2

Table 4.14 shows that the number of cases on which both initial and retest data was available was quite small, except for the two year interval in the special class group where data were available on 22 cases. For other year intervals, in both the special and regular class groups, the numbers fell to from 3 to 9 cases. The trends suggested by the data on the 22 special class cases with retests after two years are as follows:

'Organic pattern of high and low scale scores

1. On initial testing, there is a trend toward the 'organic' pattern previously mentioned for the entire Phase II group. That is, Comprehension, Vocabulary and Picture Completion are relatively high, and Arithmetic, Digit Span and Coding are relatively low.

Pattern persists

2. On subsequent or repeated testing, the trend toward the above pattern of relatively high and low scale scores appears to persist.

V=P initially

3. On initial testing, the IQs for the Verbal and Performance sections are about equal (in this sample almost identical).

V<P subsequently

4. On subsequent or repeated testing, there is apparently a difference between the IQs for the Verbal and Performance sections. There appears to be a downward drift in most of the Verbal sub-tests. The Performance sub-scores, on the contrary, tend to remain the same, or in the case of Object Assembly (and Mazes if we consider the 5 reported cases) to show a rise. The effect of this change is to make the Performance IQ appear higher than the Verbal on subsequent or repeated testing. This point is of some technical interest to psychologists and is mentioned further in the next chapter.

2. Bender-Gestalt Test

As mentioned in the preceding chapter, Bender-Gestalt drawings were requested initially and at yearly intervals on the Phase II cases. Following an experimental scoring method adapted from Clawson (1959)

by Lambert, et al. (1959), the drawings were scored according to criteria listed in a four-page check-sheet. The check-sheet specified the features, dimensions and proportions which could be accepted as normal or classified as abnormal. Tally marks were entered for various kinds of errors or shortcomings. The tally marks were then simply added up, to yield a total "error score."[1]

Scoring

In training for such scoring, four consultants worked together for two days, practicing jointly, then independently, upon the same set of drawings. At the end of this training period they found they were assigning scores that seldom differed by more than two or three points, rarely by four points or more. The final score for each drawing was the average of the scores it received from two or more consultants after their training period.

Training for scoring

Table 4.15 gives the means and standard deviations for all available Bender drawings of Phase II children on their initial testing. The results are given for both special and regular classes. Year interval re-test results are also given wherever they were available on the same pupil.

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[1] It should be emphasized here that this scoring system is still in its experimental phases, does not assign different weights to tally marks for "serious" or "gross" errors as compared to "minor" errors, and even contains one or two illogical artifacts such as requiring a tally for a normal feature.

TABLE 4.15

NUMBERS, MEANS AND STANDARD DEVIATIONS OF BENDER SCORES AVAILABLE AT THE TIME OF ADMISSION AND AT YEAR INTERVALS THEREAFTER

	Special Class			Regular Class		
	N	M	S.D.	N	M	S.D.
Initial Test	56*	36.04	7.58	34*	33.71	8.54
			One Year Interval			
Initial Test	20	32.90	9.37	13	31.4	6.50
Retest	20	30.03	10.23	13	32.5	7.24
Difference		2.9			-1.1	
			Two Year Interval			
Initial Test	9	38.7	6.63	8	39.1	8.08
Retest	9	34.1	7.91	8	25.5	7.71
Difference		4.6			13.6	
			Three Year Interval			
Initial Test	20	36.6	9.70	11	35.2	8.01
Retest	20	30.6	8.93	11	32.0	6.58
Difference		6.0			3.2	

* For the total of these 90 cases the mean was 35.16 and the S.D. was 8.04.

Bender scores show improvement trend

From Table 4.15 it is seen that on the initial testing the mean "error" score was about 36 for the special class group; about 34 for the regular class group, and about 35 for the total group. There is a trend toward lower error scores on re-tests. The trend appears orderly and progressive in the special class group where the number of re-test cases reaches 20 in the one and three year intervals. It appears less orderly in the regular class group where the numbers of cases are 13 or fewer at each interval; also the error-decrease is smaller.

3. Draw-A-Diamond Test

From the Stanford Binet (1937 edition) the Copy-A-Diamond Test was used as part of the Phase II battery of tests. The average seven-year-old child makes at least two successful copies of the model drawing in three trials. In the present study a simple scoring system was used in which one point was scored for each successful copy of the model diamond. Three trials were given, hence the maximum score was three points. Each protocol was judged according to the Binet standards by three experienced raters. For 31 Phase II cases, each of which had records available for the initial testing in 1958 and the retesting in 1960, the results are shown in Table 4.16 below:

TABLE 4.16

AVERAGE SCORES OF THIRTY-ONE PHASE II CHILDREN ON THE DIAMOND COPYING TEST (FROM THE SEVEN-YEAR LEVEL OF THE 1937 STANFORD-BINET) AT ADMISSION AND TWO YEARS LATER IN JUNE 1960*

	N	1958	1960
Special Class	17	.82	.95
Regular Class	14	.57	1.07
Total	31	.71	1.00

* Average age in June, 1960, for these thirty-one cases was 11.1 years; range 8.5 to 14.2 years.

Scores improve but low for age

Table 4.16 shows that the average for the group was only about one correct drawing out of three at the re-testing in 1960. As a group they thus failed to show seven-year-old perceptual ability on this task, although the average age of the group was about eleven years.

4. Draw-A-Man Test

Draw-a-man shows low scores

The Goodenough (1926) Draw-A-Man Test was also requested as part of the battery for Phase II pupils. Of the fifty-four Phase II children with records available in the 1960 testing, forty-three (80%) scored from one to three years below the norm. The WISC IQs for these same cases averaged 94.25.

Clinical rating differs from normal

A clinical psychologist who has scored Goodenoughs for over twenty years reviewed the drawings subjectively. She reached the opinion that they differed from normal drawings in the following respects: 1) difficulties in perception of the organization of the human body--e.g., unusual treatment of the head, extremely poor proportion, poor execution of shoulders, etc.; 2) beards and other added details; 3) 'bizarre' depictions; 4) unusually accented fingers; 5) very heavy lines; 6) segmented trunks; and 7) missing feet or other essential parts. In her opinion one or more of these characteristics were present in about 41% of the drawings.

5. Achievement Tests: Harsh-Soeberg, Jastak, and C.A.T.

Achievement test results recorded

In regard to scholastic achievement, Tables 4.17 to 4.19 show the tests used and the grossreturns available on each test for the special and regular class groups during Phases II and III. The following cautions are noted:

1) With certain exceptions, the available numbers are quite small and hence carry no assurance of representativeness.

2) Where the re-test numbers are substantially different from those of the initial test, selective factors are

involved, and the test-retest findings cannot be taken as definitive. These and other points are discussed further in the following chapter. The results with low numbers of cases are included here chiefly for the sake of recording the data.

Harsh-Soeberg SPRD

On the Harsh-Soeberg Survey of Primary Reading Development two tests were available for 27 of the special class pupils and for 25 of the regular class pupils. The tests were supposed to be given to each group at the middle of each academic year of Phase II. However, due to confusion on this point, the regular class group did not receive their first test until the end of the first year of Phase II. The average ages of each group are shown, as well as the grade scores obtained, in Table 4.17 below.

TABLE 4.17

AVERAGE GAINS IN AGES AND GRADE ON THE HARSH-SOEBERG SURVEY OF PRIMARY READING ABILITY

	N	Age	Grade Expected	Grade Obtained
Special Class Sample				
Initial test	27	9.9	5.8	2.7
Retest	27	11.0	6.9	3.2
Gain		1.1	1.1	.5
Regular Class Sample				
Initial test	25	10.2	6.1	2.3
Retest	25	10.7	6.6	2.8
Gain		.5	.5	.5

Table 4.17 shows that at the time of the initial test the average age was 9.9 years for the 27 test-retest cases in the special class group, and that the expected grade for this average age is about 5.8 grade levels. This sample of cases scored approximately at the 2.7 grade level, which is 3.1 grades below normal. For the available 25 regular class cases, the corresponding figures were a mean age of 10.2 years for which the expected grade level is 6.1, and thus this sample was 3.8 grade levels below normal initially. Each sample averaged a gain of one-half year in reading achievement during the period between their tests. The intervening period was shorter for the regular class group but the achievement reached a higher average level for the special class group.

For normal achievers of the above ages, the Harsh-Soeberg SPRD would not have been an appropriate instrument, for it is impossible to score higher than 4.1 grade levels on this test. On the re-test, five pupils in the regular class sample had scores of 3.5 or higher; in the special class group there were fourteen such scores approaching the "ceiling" of this test. Thus, it appears that the special class group, being older and scoring higher, may have been held down more by this "ceiling".

In addition to the test-retest cases, scores were available at the second testing period for 28 more (total 55) special class pupils and 19 more (total 44) regular class pupils. The average reading level of the 55 special cases was 3.0 grade levels, while that of the 44 regular cases was 2.9 grade levels.

On the Jastak-Bijou Wide Range Achievement Test, data were available from only 17 special class children, and from only 5 regular class children for the first year of Phase II. At the end of Phase II (June, 1960), results on this test were secured on 44 special class

and 11 regular class children, though not all of these took all sections of the test. These data are presented in Table 4.18 below.

TABLE 4.18

JASTAK-BIJOU WIDE RANGE ACHIEVEMENT TEST RESULTS ON ALL AVAILABLE SCORES AT THE END OF PHASE II (June,1960)

Special Class		Regular Class	
	Reading Vocabulary		
N	M	N	M
44	3.3	(11)	(3.3)
	Spelling		
39	3.3	(5)	(3.5)
	Arithmetic		
40	3.8	(5)	(3.6)

( ) = Small N figures included merely for completeness of record.

Table 4.18 shows that on the 1960 testing (end of Phase II), the special class group was testing at about the 3.3 grade level in reading and spelling, and about a half-year higher in arithmetic. The reading results agree quite closely with the Harsh-Soeberg results for special cases on the second testing (3.3 on Jastak-Bijou, 3.2 on Harsh-Soeberg). The table also shows that performance of the NH pupils is somewhat better in arithmetic than it is in either reading or spelling.

C.A.T. few re-tests available

On the California Achievement Test (C.A.T.) records one year apart on the same children were available for only fifteen special class and eleven regular class pupils. These records showed no more than two subtests on which gains were apparently different. On

Arithmetic Reasoning, the special pupils gained an average of nine months as against four months for the regular pupils. And on spelling, the special class pupils gained an average of ten months as against five months for the regular class pupils.

At the end of Phase II (June,1960) results on the C.A.T. were secured on a larger number of children. For 52 special class pupils and 32 regular class pupils the results are presented in Table 4.19 below.

TABLE 4.19

MEANS SCORES OF ALL CALIFORNIA ACHIEVEMENT TEST RESULTS OBTAINED AT THE END OF PHASE II (JUNE,1960) ON PUPILS IN SPECIAL CLASSES (N=52*) AND REGULAR CLASSES (N=32**)

Reading Section

	Vocabulary	Comprehension	Total Reading
Special Class	3.9	3.6	3.8
Regular	3.5	3.2	3.3

Spelling Section

Special Class	3.5
Regular	3.2

Arithmetic Section

	Funda-mentals	Reasoning	Total Arithmetic
Special Class	4.3	4.1	4.2
Regular	3.9	3.5	3.7

* This sample equals 81% of the original total of 64.
** This sample equals 61% of the original total of 52.

For the special class group the average age of the 52 cases tested on the 1959-60 C.A.T. was 11.33 years and the expected grade for this age was 6.2 grade levels. For the 32 regular class cases the corresponding figures

were 10.69 years and an expected grade of 5.5 grade levels. Compared with normal grade achievement for their ages, both groups remained two or more years retarded in most subject areas on the 1960 testing. The results in general are similar to those on the Harsh-Soeberg and the Jastak; achievement is between grade levels 3 and 4 in reading and spelling, and a trend is visible toward somewhat less retardation in arithmetic. Table 4.19 also show that for both regular and special class cases a trend was present toward higher Reading Vocabulary (single words) than Reading Comprehension (sentences and paragraphs); and toward higher Arithmetic Fundamentals (adding, subtracting, etc.) as compared to Arithmetic Reasoning.

6. Ratings and Opinionnaires: Burks, Pupil, Parent, and Work-Samples

Burks' behavior rating scale

On the Burks' (1955) Behavior Rating Scale (see sample in the Appendix) of 97 Phase II-A cases on whom a rating was taken while they were still in regular classes in 1958, 82 cases or 85 percent were rated above the cut-off score of 60 points. This cut-off score is considered by Burks to be the highest possible score for normal children. The scoring system consists simply of adding up all the one, two, three, four and five point ratings. Further results from this instrument are lacking for the reason that, as explained by procedures, it could not be re-applied to the special class pupils; nor was it re-applied to regular class pupils at later dates.

Poor impulse regulation

A tally also revealed that in 80.4 percent, the symptom of hyperimpulsiveness (short attention span, hyperactivity, explosiveness, and so forth) was rated as high. This may have implications for the question of sub-types discussed in the next chapter.

Pupil opinionnaire

Members of the Interpretation Committee developed a Pupil Opinionnaire (see copy in Appendix) and used it to conduct guided interviews with the special class pupils. They interviewed 52 such pupils at the end of Phase II and 71 at the end of Phase III. The results are shown in Table 4.20 which follows.

TABLE 4.20

RESULTS ON THE PUPIL OPINIONNAIRE FOR CHILDREN IN SPECIAL CLASSES

		Phase II*		Phase III*	
1.	Would you like to go back to regular class?	Yes 41(79%)	No 11	Yes 59(83%)	No 10
	Now or later?	Now 27(52%)	Later 16	Now 34(48%)	Later 24
2.	Have you liked being in this class?	Yes 42(81%)	No 10	Yes 52(73%)	No 13
	More or less than in regular?	More 21	Less 25(48%)	More 28	Less 37(52%)
3.	Do you think you have learned in this class?	Yes 46(88%)	No 5	Yes 64(91%)	No 4
	More or less than in regular?	More 30(58%)	Less 15	More 42(60%)	Less 18
4.	Do you have many friends now?	Yes 38(53%)	No 9	Yes 56(79%)	No 13
	More or less than in regular?	More 12	Less 31(60%)	More 17	Less 45(63%)

* 52 children were interviewed at the end of Phase II; 71 at the end of Phase III.

Pupils report greater learning; desire return to regular class; fewer friends

At the end of Phase II, 88% of the children interviewed said they felt that had "learned" in special class (Item 3), and 58% thought that the amount learned was greater than in regular class. About half (48%) said they liked special class less than regular class; a few

less (40%) said they liked special class more than regular class; and 12% gave no clear answer. About four-fifths (79%) wished to return to regular class at sometime in the future. More than half (60%) stated they had fewer friends in special class.

The figures for Phase III, in which many of the same children were re-interviewed a year later, reflect essentially the same results.

Parent opinionnaires need analysis

Each year all available parents of Phase II children were asked to fill out and return Parent Opinionnaires. (See copy in Appendix, Form #27539). The figures for compliance on the part of the parents are given in the preceding section as one of the operational results. The form contains twenty items, some with subdivisions. Each item or subdivision requires two responses, one showing how the child appears in the current year, and one showing how he appeared in the preceding year. For each year, the degree or frequency of the behavior or condition is checked on a three-point scale. These complex results still await analysis (possibly by research volunteers).

Ratings of pupils' monthly work-samples need ratings

Monthly samples of pupils' work were requested, accompanied by information sheets (see samples in Appendix) filled out by the teachers. An attempt was made to form a committee of curriculum experts to judge each sample of work and to assign to it an approximate grade level score (or at least to rank-order the work-samples) to see whether improvement was shown with time. Only two such curriculum "judges" could be secured for several days trials and they worked only with the samples of pupils' drawings. This endeavor in general seemed feasible, but also awaits further work (possibly by research volunteers).

Medical Findings

The findings of the medical re-evaluation team supplied by the State Department of Public Health were summarized in a letter of July 29, 1960. This letter by Robert P. Sedgwick, M.D., and Kenneth Z. Zike, M.D., is presented below in its full original text.

July 29, 1960

Mr. John Howe
Coordinator of Pilot Study
for Neurologically Handicapped Children
Los Angeles County Schools
808 North Spring, Room 404
Los Angeles 12, California

Dear Mr. Howe:

We submit with pleasure a final report of our work in the Pilot Study. As you know we were hired by the State of California and the County Schools to independently examine and formulate a diagnosis on all children previously selected for the Pilot Study as "minimally neurologically handicapped". These patients were originally selected from the County Schools and admitted to the Project on the basis of behavioral and/or learning problems, as noted by school personnel, and confirmed by medical diagnosis of minimal neurological handicap, and screening by the Review Team. Children were examined by us in the schools, and as a rule we were able to examine three children per morning (approximately four hours). Procedure of examination was as follows: First the parent(s) gave the history. This included family history, history of pregnancy, birth and early life, developmental data, medical and surgical illness or injury, behavioral and learning data and inquiry concerning personal-social adjustment, and family structure relationships. Next the child was examined with the parents present. Doctor Zike did the general pediatric examination and Doctor Sedgwick did a neurological examination. This was followed by a brief discussion period with the parent(s) if desired. Then the doctors met with Mr. Howe and the School Psychologist and the relevant psychological and educational data was reviewed. Finally the report of our findings was dictated onto a tape recorder, including a diagnostic formulation and recommendations.

The core concept on which this study is based, as we understand it, is that there is a group of children who are not mentally retarded, cerebral palsied, primarily emotionally disturbed or psychotic, and yet who have such learning and/or behavioral difficulty that not only is their own progress and

growth seriously impeded but they also constitute a difficult problem for families, peer groups and educators. The symptomatology of such children is divisible into two primary parts.

1) Behavioral disorders - These children are characterized by hyperactivity, short attention span, poor impulse control; often they are stubborn and aggressive. There may be disturbance of the sleep rhythm. They are often in interpersonal difficulty, as they fail to perceive the structure of social situations and relationships in the accepted or usual way. They have difficulty in forming value judgements compatible with group values and, as a result, find themselves constantly "at odds" with adults and with their peer group. They are often characterized as "naughty", "impossible", "a little terror", etc. Because of integration difficulties and consequent disappointment and anger on the part of peer and authority figures, secondary psychological symptoms routinely develop. The children develop anxiety and defend against this by withdrawal into defeat or by intensification of angry, aggressive "I don't care" tactics. When advice is sought by parents they are often told "There is nothing wrong with this child", or "He'll grow out of it", or "He must be emotionally disturbed". As a result of this there may be increasing confusion and guilt on the part of the parents.

2) Learning disorders - These children have perceptual difficulties, which are primarily visual. That is to say, they have difficulty in the visual concept of their own body scheme and its relation to the external world, and this, along with primary motor defect, gives rise to the commonly detected deficit called "perceptual-motor defect". They often have difficulty in writing, and in skilled tasks requiring coordination of hand and eye, such as building, assembling, etc. In the symbolic area the most common deficit is that of reading, but there may be arithmetical defect also. At abstract levels of learning they may have difficulty in generalization, concept formation, differentiating whole from parts, and seeing abstract connections. These defects lead to all types of learning problems, but the most common problem encountered is the student who is a poor reader, writer and speller.

The concept that such behavioral and learning difficulty often have their fundamental cause in brain dysfunction rests on the fact that exactly the same constellation of symptoms has been often seen to result in cases of children, previously normal, who have suffered severe and demonstrable brain insult, as from trauma or encephalitis. The absence of clear history of such brain insult does not by any means prove that more subtle insult has not occurred, and it is the feeling of many workers in this field that minimal insult to the developing organism may be important in this connection. Genetic and maturational factors are probably also highly important in the genesis of this problem. Children suffering from the symptoms outlined above

have been variously designated "brain damaged", "Strauss syndrome", "organic perceptual handicapped", etc., but we have selected the designation "minimally neurologically handicapped" for two principal reasons: 1) One is not committed by this to a statement that actual structural brain damage exists. As a matter of actual fact, we doubt that such structural damage could be demonstrated at autopsy in a high percent of cases, and feel that the deficit is often at a functional rather than structural level. 2) The term "brain damage" is shocking to interested parents, educators, friends, etc., and introduces a mistaken concept with far-reaching implications as far as the patient is concerned.

We have studied 119 patients. Of these 103 were male and 16 were female, giving an approximate M:F ratio of 8.1. The mean age at the time of examination was 9.7 years. The average age when the problem was first noted was 5.3 years

Heredo-Familial Factors: We inquired re a history of learning problem in the parents and in the sibs with the following results for 108 cases with available information: 1) Positive history - 21 (19.4%). 2) Equivocal history - 12 (11.1%). 3) Negative history - 75 (69.4%). 4) No information - 12 (10%). We are well aware of the crudeness of this method and the figures presented are not intended to indicate actual genetic transmission, but will perhaps serve as a rough indication of the importance of genetic factors.

Exogenous Insult: We mean by this insult to the developing organism "from the outside", that is, not endogenous-maturational in origin. We have divided such insults by time of occurrence into three groups: a) Prenatal - of 111 patients concerning whom adequate information was available 13 (11.7%) had positive history of insult, 11 (10%) had equivocal history of insult and 87 (78.3%) had no history of insult. b) Perinatal - of 114 patients concerning whom adequate information was available 18 (15.7%) had history of positive insult, 21 (18.4%) had history of equivocal insult and 75 (65.7%) had no history of such insult. c) Postnatal - of 117 patients concerning whom we had adequate information 22 (18.8%) had positive history of insult, 10 (8.5%) had history of equivocal insult, and 85 (72.6%) had no history of such insult.

Personal-Social Pathology: This factor we find by far the most difficult to evaluate for several reasons. First, many of the children develop secondary psychological symptoms because of the difficulties consequent to the primary behavioral and learning problem. They are subject to much criticism, pressure, ridicule and failure, and their own self-image becomes tenuous and they may have much consequent anxiety. The development of such symptoms only serves to accentuate the total problem and feeds back to them additional problems, so that a vicious circle is

created. Secondly, personal-social pathology is highly complex and one interview, it seems to us, is hardly sufficient for adequate evaluation. Nevertheless, effort was made to score this factor and distinct personal-social pathology was said to exist when there was clear-cut evidence of traumatic family situation or of neurotic symptom-formation such as phobias, obsessions, depression, withdrawal, etc. Such evaluation was made in 109 children. There was evidence of definite pathology in 27 (24.8%), equivocal evidence in 51 (46.7%) and negative evidence in 31 (28.5%).

Neurologic Findings: It is commonplace that these children do not present classical signs on routine neurologic examination of injury or disease involving the nervous system. We are not surprised therefore that of the 119 patients only 14 (12%) showed unequivocal, classical, pathological neurologic findings. Patients were likewise scored for presence of "soft" findings. By these we mean findings suggestive of central nervous system dysfunction, but not conclusive of this. Such signs would include developmental stigmata, general incoordination, simultaneous perceptual defects, dysphasia, dyslexia, dyspraxia, hyperactivity, and hyper-reactivity of pronounced degree. These were found in 38 (32%) of the patients. No abnormal findings were recorded in 57 (56%) of the patients.

Electroencephalographic Studies: Electroencephalograms were performed in three different laboratories in the area. The findings presented are those of the electroencephalographers, and we have not reviewed these records. Based on 84 available records the results were as follows: Definitely abnormal record in 31 (37%), equivocal record in 24 (28.5%), normal record in 29 (34.5%).

Eye-Hand Dominance: The findings of crossed eye-hand dominance has in the past been given great significance. Present opinion is divided concerning the importance of this finding and it may have no significance whatsoever. Nevertheless, we have scored this factor in 100 patients. Crossed dominance was found in 28 (28%). In the remainder (72%) the dominant hand was ipsilateral to the dominant eye. In these 72 patients the major hand and eye was the right in 63, and the left in 9. The latter figure approximates the normal incidence of left-handedness in the general population.

Activity Status: Because hyperactivity is such a prominent symptom of minimal neurological handicap, this factor was scored, both from history and personal observation. Of 119 children 101 (85%) were hyperactive. 20 (18%) were normally active and 3 (2%) were hypoactive.

Other Disease: 3 children were noted to have cerebral palsy. 2 children were noted to have moderately severe pulmonary allergy

and one instance of each of the following was diagnosed: Congenital nystagmus, cyanotic congenital heart disease, Marfan's syndrome, hypothyroidism, tuberculosis, familial cleft palate, polyostotic fibrous dysplasia, duodenal ulcer, and post-poliomyelitis.

Medications: Attempt was made to discover how many of the children had taken tranquilizing medications because of their behavioral problems and hyperactivity. Many of them had been on multiple drugs in rather haphazard fashion. We did not feel that we could adequately evaluate by this method the results of drug therapy. Of the 119 children 51 had been given tranquilizing drugs. 64 had not been given such drugs and in 4 information was not obtained. Our general impression from the parents of the children who had been on a drug regime was that parents felt that there had been favorable results in a ratio of about 4 to 1.

Convulsive Disorders: The incidence of convulsive problems in our patients was as follows: In 119 patients 9 (8%) had a history of one or more febrile seizures, 6 (5%) had a history of motor seizure of either major or minor type, not accompanied by fever, 4 (3%) had history of recurrent convulsive equivalents (automatism), while none had suffered from petit mal attacks.

Diagnosis: Diagnosis of minimal neurological handicap is made after consideration of all factors of history, examination and laboratory procedures enumerated above. There is no single finding which of itself is pathognomonic of this disorder, and the diagnosis is one of clinical impression only. It is to be emphasized that it is dangerous oversimplification to conclude from one pathologic finding that the patient is therefore organically handicapped or emotionally handicapped. Another way of saying this is to state that an abnormal electroencephalogram or a history of severe maternal bleeding in the first trimester, etc. are not of themselves sufficient evidence to make a diagnosis of organic handicap. In like manner the history of divorce, maternal rejection, intense sibling rivalry, etc. are not of themselves adequate to enable one to make a diagnosis of primary emotional disturbance. We feel that such 1 to 1 simple relationships of cause and effect are rarely operative in such a complex organism as a human being. We have instead tried to consider our patients in a more total way and have tried to evaluate the various genetic, physical and experiential stresses to which they have been subjected. It is true we have given diagnoses indicating primary organic disturbance (minimal neurological handicap) or primary emotional disturbance. Such division is permissible on both practical and linguistic grounds. However, it is by no means our intention to fall into the "mind-body trap" by naive differentiation of structure from function, psyche from soma. All organismic function has valid description in both physical and psychological terms, theoretically at least, and each language is valid and the use of one language does not

imply that events best described in the other language are not simultaneously occurring.

In our series of 119 patients we found 94 (79%) whom we felt were best diagnosed as minimally neurologically handicapped. 16 patients (13.4%) were felt to have such equality of organic and emotional factors that it would be erroneous to emphasize one over the other. 7 patients (5.9%) were felt to have primary emotional disturbances. 1 patient was felt to be a case of primary mental retardation, and in 1 case we could not come to definitive diagnosis of any significant pathology.

Conclusions: 1) Of the total sample of 119 patients suspected of having minimal neurological handicap as the basis for their learning and behavioral problems, we felt that the diagnosis was substantially correct in 79.4% of cases. In 13.3% of cases it was arguable whether the child should be considered primarily neurologically handicapped or emotionally disturbed. In 7.3% of cases we felt that the diagnosis was substantially in error. This high correlation of our opinion with that of the screening team admitting patients to the study is due, we feel, to the close criteria demanded by the screening team for admission of children to the study. In other words the high positive correlation is due to the selectivity of the sample. 2) It would be erroneous to conclude from the above that approximately 80% of school children of comparable age and grade with learning and/or behavioral problems suffer from minimal neurological handicap. We do not know the incidence of this type of disorder but qualitative experience suggests to us that it is of at least the same order of incidence as cerebral palsy and mental retardation. 3) The etiology of minimal neurological handicap is varied and includes genetic-maturational factors as well as factors of exogenous insult. It has been noted above that it is usually illogical to point to one stress event in the life of the organism and to conclude that this is responsible for the entire clinical picture of the patient as we see him. We feel that for adequate diagnostic evaluation all factors of heredity, growth, injury and experience should be considered and the resulting personality be studied in the light of "field theory" rather than in terms of chain-causal relationships. 4) The preponderance of this condition in males, like that of primary reading problems is unexplained. It is our feeling that this may well have genetic implication. 5) The average age when the problem was first noted was 5.3 years and this reflects, of course, the starting of school experience. 6) While we feel genetic factors are important, it is impossible to validate this in any scientific way and our figures are only assumptions and are not to be taken as clear statements of fact. 7) We feel the high incidence of history of exogenous insult is important, and illustrative of the well-known fact that the developing organism is vulnerable and even mild insult at a crucial developmental level may produce serious, though subtle damage.

8) We have as yet no opinion regarding the importance of crossed eye-hand dominance. 9) We have as yet no opinion regarding the efficacy of medication for the group as a whole, nor of specific indications for specific types of medication, with the exception of the use of the anticonvulsant drugs for patients with convulsive problems. We feel that skepticism in this area is healthy since the medical profession and the public are presently inundated with enthusiastic claims for the "tranquilizers" and the "psychic energizers". Nevertheless, we have the qualitative impression that the very hyperactive, poorly controlled, impulsive, scattered youngster with short attention span can occasionally, or even often, be helped with tranquilizing medication, when given with proper technique and dosage. 10) Careful neurologic examination fails to elicit definitely pathologic findings in high percent of patients. "Soft" neurologic findings are found in say a third of the patients, but it is difficult to evaluate the importance of these findings. This obviously requires further study, including control series. 11) The electroencephalogram has been widely acclaimed and used as a definitive tool in the diagnosis of minimal neurologic handicap. We would urge caution in this regard and list our reservations as follows: a) The standards of normality in children are poorly defined and vary from one electroencephalographer to the other. b) The presence of clear cut abnormality in the electroencephalogram is not of itself diagnostic of this condition. c) The absence of abnormality in the electroencephalogram does not exclude this condition. d) The electrical activity of the brain as recorded on the brain wave is variable from hour to hour, day to day, and month to month, etc., so that successive tracings may show definite differences.

Nevertheless, we feel that the electroencephalogram is a valuable ancillary diagnostic tool and should be performed on every patient suspected of having this type of handicap. Much more study in this area is badly needed. 12) One of the most valuable diagnostic tools in this condition is that of the examination performed by a qualified clinical psychologist. We hope to incorporate this type of data in a later medical report, and have not included it here because of problems of time and the fact that evaluations and correlations of these tests are still going on and will be separately reported. 13) The importance of psycho-social factors in the total evaluation cannot be overly stressed. It is probable that most children with minimal neurological handicap have secondary symptomatology of this kind, as a result of their difficulty in integrating with peer and authority groups as previously explained. Primary emotional problems can produce many of the symptoms of the minimally neurologically handicapped child and the differentiation is often extremely difficult. 14) The diagnosis of minimal neurological handicap cannot be made from any one piece of historical information or objective test data. It can only be made by considering all of

the factors discussed above and by consideration of the organism as a "field" in which all of these genetic, physical, and psycho-social factors are interacting.

Recommendations: 1) Much work and study remains to be done in this field. It will be noted that most of our assumptions and conclusions are tentative only, and control studies, investigative studies, and validating studies are badly needed. Most pressing is further study of the use of the electroencephalogram in the diagnosis of this condition and of the possible therapeutic use of the various tranquilizing, anticonvulsant and energizing medications. 2) Dissemination of information concerning minimal neurological handicap to the medical, psychological, teaching and social work professions is badly needed also. 3) The inclusion of parents in the actual operation of the program has been wise in our opinion. Understanding of the problem by the parents is helpful, not only to them but, secondarily, to the patients. This should be continued. 4) Therapeutically we can say the following: a) Explanation, advice, understanding and support offered in a continuing type of counseling relationship is the basic therapeutic approach. b) We are not competent to offer advice in the educational field except to state that it would seem logical, insofar as is feasible, to offer these children small classes with reduction of stimulation and tailoring of academics to their individual capacities. Individual attention would seem desirable. For psychological reasons this is best done in a regular school setting. c) Strenuous efforts should be made to avoid stigmatizing these children by rubber stamping them as "different", isolating them as a group, and neglecting their needs to feel healthy and acceptable. In this regard it should be pointed out that time is really our best therapy and many, if not most of them, will be fully capable of regular group integration within a few years, if severe psychological insult can be avoided. d) A trial on tranquilizing medications is indicated for those children who are very hyperactive, scattered, impulsive, and possessed of very short attention span.

Finally: We wish to thank those who have engaged us to make this most interesting and stimulating study. We have found it personally satisfying and challenging. We wish also to express our appreciation to Mr. John Howe for his constant and capable effort in keeping the practical details of the examinations running smoothly. We wish further to thank Mr. Howe and all of the school psychologists who helped us with their valuable information and psychological interpretation. Our gratitude is also due to the school personnel, the principals, and teachers who permitted us the use of their facilities. Their comments, information, and interest was most welcome and helpful. Finally, we wish to give special mention and thanks to Mrs. Helen McNeil for her tireless transcribing of our reports from the tapes to the charts.

Sincerely,

/S/ Robert P. Sedgwick, M.D.

/S/ Kenneth Z. Zike, M.D.

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Chapter VI

DISCUSSION

The topics discussed here follow in general the sequence of the findings reported in the preceding chapter. Certain broader aspects, as well as certain topics not dealt with in the objective findings are also mentioned.

Operational Results

ncidence
tudy needed

On the question of incidence of the NH syndrome, as yet the literature seems to afford no definitive studies. No inferences can be drawn on this point from the present study either. This basic concern still awaits attack by a systematic procedure which will yield definite ratios per 100 children in different grade levels, and for various regions and socio-cultural levels.

Closely allied to the question of incidence are the questions of sex differences and subtypes in NH.

ifferences
y sex and
y subtype

Table 4.2 shows that boys heavily outnumbered girls in admissions during both years of Phase II. At least two possible explanations can be suggested to account for this fact. First, there may be one or more genetic factors creating or activating more NH in boys. For example, more first-borns are boys, more fatalities occur in male births (135 still-born males to 100 females), and boys mature more slowly than girls. Second, cultural factors may play an important part. For example, agressiveness and hyperactivity are socially tolerated or even encouraged to a greater extent in boys than in girls. Hence, boys may inhibit their impulses less and therefore the NH symptom of impulsiveness may be seen more easily in them.

Table 4.2 also showed that the discrepancy between boy and girl admissions was greater during Phase II-A than during Phase II-B. Does this mean that there was a back-log of boys' cases waiting at the first of the program, and that the boy-girl ratio is really more like two or three to one instead of a more extreme ratio?

Is it possible that if surveyed among very young children, before cultural differences have been superimposed, no sex differences would be found in the incidence of the NH syndrome? This finding, though logically possible, does not seem probable for cultural factors alone do not ordinarily produce sex differences of this magnitude.

Subtype hypotheses testable

The above questions represent hypotheses which are testable in future scientific studies. Sex differences, if they exist, would be one form of clinical subtype of NH. The medical findings disclosed that about four-fifths of the cases possessed the symptom of hyperactivity, while the remainder did not. These might also constitute subtypes. Others might be various combinations of the four symptoms described in chapter one. Still other subtypes could theoretically be based upon symptoms generated in various areas of the brain such as those for vision, audition, motion, arousal, somnolence, emotionality, and so forth.

Importance of subtypes for education

The existence of various subtypes is of more than academic interest. In the first place, there are immediate implications for educational practice. If boys' cases far outnumber girls', perhaps special NH classes should not be coeducational. Or again, if it is consistently found that one-fifth of the cases are free of the hyperimpulsiveness that necessitates cubicles, reduced class-size, and so forth, this might mean that small special classes are needed for the hyperimpulsives only. The non-hyperimpulsive boys and girls should perhaps be taught in coeducational classes of regular size. For those NH children who never had the hyperimpulsive symptom, or who have recovered from it after a year or two in a small class, one can see no reason why the symptoms of perceptual or memory difficulty could not be given special training in a class of regular size. This would still be a special NH class (perhaps referred to as the "large" NH class), and normal children would not be placed there. The latter

do not require very-small-gestalt perception methods and special or numerous memory drills and would only be slowed down and hampered by such methods.

Importance for medicine

The existence of well-identified subtypes of known statistical frequencies could be of medical significance also. Such facts would help to point to possible causative factors. Treatments might also be discovered more readily, some of which might be more effective with some subtypes (e.g., hyperactives) and not indicated for others.

Many NH face nonregular programs

It is quite important that nearly half (45%) of the special class group had been or were being considered for some modification of the usual educational program (Table 4.5). This is obvious validation of the legal descriptive definition of the NH child as one who (by reason of a physical condition) is unable to receive full benefit from the ordinary educational program. It is prima facia evidence that NH children need special programs. It is obvious that many NH children face nonregular school programs and heightened chances of becoming educational casualties.

NH children may impede teacher and other pupils

Not only does it appear that many NH children do not benefit from the regular program. The obverse also seems true. That is, the regular class program appears to be unable to benefit from or even to tolerate the participation of many NH children. The strain of the daily and hourly struggle to guide or to contain a hyperexcitable child's impulses may be very wearing on the teacher. Also disheartening are the teachers' repeated attempts to overcome the child's perceptual and memory barriers. In any event, some important satisfactions that teachers usually seek, such as working comfortably with children and seeing them learn quickly and well, are obstructed by the NH symptoms. It is understandable that teachers often request removal of NH children from their classrooms. The question is also frequently raised by educators whether a disrupting child should be allowed to

create a serious drain on the teacher's time and resources, and to interfere in this way with the progress of the normal children in the group.

Organic and social difficulties may reinforce each other

Closely related to the above discussion is the question of intensification of mental health problems or delinquency. It does not require much imagination to conceive of NH as a faulty somatic condition which in turn brings about faulty psychic conditions. Poor perception, poor memory, and poor impulse control can easily be thought of as causing failure at school, and strain on interpersonal relations. Nettled parents, peers, or teachers may thus react with dissatisfaction toward the NH child and lay more stresses, threats or requirements upon him. Under these conditions continued failures may result in a spiral cycle which brings less and less satisfaction in the attitude of others toward the NH child, or his attitude toward them, or even toward himself. Thus delinquency, or mental illness, or both may result in time.

Cases institutionalized for mental illness and delinquency

In this connection it is interesting to note that the special class group did not have any known cases of institutionalization for delinquency or mental illness (Table 4.6). The regular class group had four such known instances. This could not have been caused by the severe cases being more numerous in the regular class group. In fact the reverse was definitely true. The special class group had a significantly greater number ($p < .001$) of the presumably severe cases given a modified program or considered for one. The total number of known cases institutionalized (four) is too few and other factors such as district policies, socio-economic levels, and so forth are too poorly identified or controlled to determine statistically whether all institutionalizations occurred in the regular class group by chance or not. This discussion raises important questions for future study. Can or do special NH classes exercise a stabilizing influence on NH children, and/or their parents? Can special classes

thus materially reduce the number of institutionalizations for delinquency or mental illness? These questions, like those raised earlier, are testable by research.

NH classes stabilize pupils' attendance

The question of whether NH classes can or do exercise a stabilizing influence on the movement of NH pupils and/or their parents seems to be answerable at least to some extent from the data in Table 4.6. There it is seen that the difference in steady attendance for two years is massively in favor of the special class group (86%) as against the regular class group (40.4%). It is true that, other factors such as socio-economic levels or customary pupil turn-over rates in various districts were not controlled. Theoretically, therefore, the greater movement in the regular classes might have been caused by socio-economic differences or by regular class pupils having been drawn from high turn-over districts and special class pupils having been drawn from low turn-over districts. However, when one recalls that nearly half of the special class group had trouble avoiding a modified program, it seems remarkable in and of itself that 55 out of 64 such children showed steady attendance for two or more years in any school program. This fact in and of itself is impressive, even without reference to the poorer attendance of the regular class group. It does not seem likely that a difference of the magnitude referred to above (86% as compared to 40%) would be caused only by unidentified or uncontrolled factors.

"Ideal" placements after three years

In reference to the data in Table 4.7 there is a surface implication that, of those NH children who had three years in a special NH class, about three-fifths (12/19) made sufficient progress to return to regular classes. And conversely, of those NH children who had continued in regular class for the three years, about three-fourths (15/19) still had need of time in a special class. Again many reservations must be pointed out against

accepting this interpretation or any other uncritically. First, the data are not a large sample (40%) of the original total group. Second, the special and regular subgroups were not equated. Third, the data are the theoretical opinions of district psychologists. Fourth, the judgments might be based on some other concealed judgments such as: the NH group have probably had maximum benefit after three years, so let's give the others a chance in the special class now.

Parents' reactions solidly support special classes for NH

The figures showing the differences in parent responses to invitations to attend meetings or to return questionnaires are clearly and solidly in favor of the special class group. This appears to be one of the most firm and important findings of the study. True, not every parent approached was immediately in favor of having his NH child in a special class and one or two definitely opposed it, at least for a while. However, it is abundantly clear that the overwhelming majority of parents not only did not oppose such special class placement but actively and even enthusiastically supported it. This is attested by the massive difference between the percentage of special class families attending Quarterly Inter-Disciplinary meetings (52%) as compared with the percentage of regular class families (7%). Here, again is a difference so great it does not seem likely to be caused by uncontrolled factors alone. The footnote showing the organization of the parents into a nonprofit association gives further evidence of the importance many attached to the special classes. Another such indication, not reported elsewhere, is the fact that a number of parents, acting as individuals, requested an opportunity to give favorable opinions on the special NH classes to educational subcommittees of the state legislature.

Teachers' responses to notices

Teachers' responses to NH notices, meetings and requests for data demonstrated much more responsiveness among the few special class teachers than among the more

numerous regular class teachers. This is, of course, to be expected for several reasons. The special class teachers were a more quickly accessible group, a more select group; and a group which had in common a new and challenging form of teaching to discuss among themselves. Moreover, NH children were their main business, while with regular class teachers the NH child was a minority within the class.

Possible reasons for greater duration of male teachers for NH

There appears to be some evidence (Table 4.11) that men stay longer with the job of teaching a special NH class than do women. One might speculate that this is related to the predominance of boys, and that men may be a little better able to weather the onslaughts of boys' verbal and physical aggression than are women. Also, boys may be just a little more hesitant to use these approaches on males than on the less well muscled female teachers. "Father-" and "mother-images" might be of some conscious or unconscious psychological importance here also. Ages of the pupils may be another important factor. For young children, perhaps up to age 8, smallness of size and limited profanity may soften their impact on women. And youngsters 14 and over may have better learned not to strike or insult women. The very active and impulsive ages of boys from 10 - 12 may be those which are more difficult for women, more withstandable for men.

Teachers did not frequently mention the above possible factors in their verbal reports. This may be due to the fact that teachers seldom complain directly about their difficulty in 'control' of children. They did mention short attention span (distractibility) and hyperactivity prominently and this may be a more professional way of referring to the disconcerting behaviors.

Numbers of NH classes

Regarding the changes in the number of NH classes during the course of the study, it seemed that there was always a great deal of interest in attending planning meetings and in the possibility of securing more NH classes.

The need always seemed great in relation to the number of known or suspected cases. However, when it came to actually finding an available room, providing a teacher, testing the children educationally and psychologically, and securing medical histories and diagnoses, there were seldom the required resources in terms of space, personnel, or time. Nevertheless, districts continued to increase the number of special classes until the sudden withdrawal of state financial support.[1]

Tests, Ratings, and Opinionnaires

Possibly 'normal' original IQ

The data on intelligence test scores show that as a group Phase II children were classifiable as being of low average intelligence. It is recalled that known defectives or those with scores below 80 were not admitted. Theoretically, it might be supposed that in original potential the group was not classifiable as of low average, but rather of "central" average capacity. This supposition rests on the assumption that NH probably serves to lower the functioning IQs somewhat from their potential or unhandicapped levels.

Similarity of sub-groups

Although they were not systematically equated or matched for this or other factors, the special and regular class groups appear quite similar with respect to their IQ scores. Thus, this important variable seems to have been nearly equal for both groups. The special class group appeared to have a few more cases at the high and low limits.

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1 It can be added as a post-study findings that after this withdrawal three NH classes in Los Angeles County were still continued at local district expense, and three new ones were formed in other districts. Elsewhere in the state, the class in San Mateo County continued for one more year with state reimbursement previously arranged. Thereafter, it was planned to continue this one and two additional ones at local expense. In Contra Costa County two special classes modeled on those in Los Angeles were operated during the summer, as well as during the regular school term and were given state financial support as experimental classes. In Orange County two similar classes for aphasic children were instituted with state financial support.

Trend toward 'organic' pattern

The intelligence data are of interest to psychologists and others concerned with the technical question of whether organic cases manifest characteristic patterns in their WISC subtest scores. "Unevenness" of some sort was expected and mentioned on the sheet listing criteria for cases, but no particular pattern was specified. Table 4.13 indicates that tendency toward patterning did occur in the chidren admitted to the study. The pattern may be rather grossly described as consisting of relatively lower scores on the Arithmetic, Digit Span, Coding, and perhaps Information; and of relatively higher scores on Comprehension, Vocabulary and Picture Completion.

Possible explanations of NH symptoms and pattern

The lower scores on Information may reflect the NH symptom of memory difficulty. The Arithmetic scores may also reflect memory difficulty, according to Wechsler (1961), who states that factor analysis has shown the subtest to have a relatively high loading on this factor. It may also reflect the NH symptom of difficulty in concentration or impulse-control. The same two symptoms, i.e., memory and impulse-control, probably account for the low scores on the Digit Span subtest as a whole, and for the discrepancy between digits forward and backward. Backward repetition may be lowered because of continued fade-out of auditory memory for the numbers, or because of the increased concentration necessary to remember them forward but say them backward. Scores on the Coding subtest may be lowered because of memory, concentration or faulty perception of the visual gestalts to be quickly 'learned' and drawn. Block Design and Object Assemply, when low, may reflect difficulty with visual perception.[1]

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1 These two subtests may possibly differentiate weakly between the special class and the regular class cases: for the special class cases BD > OA, vice versa in regular class cases.

Changes on retests

The changes occurring on retesting are also of technical interest. In the 22 special class cases (Table 4.14) the rise in the performance IQ (3.0 points) coupled with the downward drift in verbal IQ (3.5 points) is sufficient to warrant notice. Inspection seems to indicate that the change in the performance IQ is largely accounted for by a rise in one test (Object Assembly) wherein lack of naivete for the material might facilitate retest performance. It is interesting that this subtest has one of the lowest reliabilities for performance subtests reported in the test manual (Wechsler 1949), although these reliabilities were computed by the split-half technique and did not involve retesting.

Bender scores improve

The gains on the three Bender retests (Table 4.15) are not impressive in size but do seem convincing in their regularity and in conformity with the general picture of slow but observable improvement in NH children.

Copy-A-Diamond test reflects NH

It is of singular interest that the perceptual difficulties of NH children seem to have been so clearly revealed in this study by such a simple and rapid perceptual-motor task as copying a diamond from a model. The number of cases shown in Table 4.16 is certainly very small for both the special and the regular class group, and there can be no assurance that these available cases are or are not representative. Again, the magnitude of discrepancy is very great between the average score of 3.00 points expected for these 31 children (whose mean age was eleven years) and the average score of 1.00 point which was actually obtained. This obtained average is even below that expected for normal seven year olds, who would be expected to score an average of 2.00 points. This finding certainly seems to attest to faulty perception as a symptom of the NH syndrome.

Draw-A-Man test reflects NH

The results from the Goodenough Draw-A-Man test seem consistent with other perceptual tests such as the Bender and Diamond Copying. Since for ages up to about eight, the Goodenough can also yield an IQ, it affords

an interesting comparison with other IQ measures. The fact that the Goodenough IQ is lower for NH children than their IQs from other intelligence measures (such as the WISC or Binet) may be due to the operation of NH symptoms of faulty perception, faulty visual memory, faulty impulse-control for staying sufficiently at the task, or faulty self-concept and body image.

Achievement tests agree on academic retardation

Though the programming and also the numbers of tests and re-tests completed left much to be desired, there was nevertheless quite visible agreement on the Harsh-Soeberg, the Jastak-Bijou, and the CAT with respect to the achievement of the pupils at the end of Phase II. Both regular class and special class pupils were seen to be functioning on the average at a level between third and fourth grade. Since their ages at the end of Phase II averaged roughly 12 years its is clear that they were seriously retarded academically by about three years or more.

Skills not retarded equally

Within this pattern of retardation, basic skill subjects were not equally affected. Arithmetic appears slightly less affected than are reading and spelling. Perception and memory difficulties may play a lesser part in arithmetic.

Specials compared favorably

In the few instances where sufficient numbers were available to permit comparing special class and regular class groups the special classes seemed somewhat favored and there were no clear evidences to the contrary.

Rating scales seem valuable

A teachers' rating scale such as the Burks' Scale or the one used by Bower, et al., seems to be of value in identifying NH children their regular classes. But this cannot be asserted from this study without tautology since high scores on the Burks' Scale were one of the bases for case selection and admission. It would be helpful in the future to refine such scales to yield results on possible clinical sub-types, for example hyper-actives versus non-hyperactives.

Child Opinionnaire consistent

The results on the Child Opinionnaire seem interesting and valuable from several aspects.

First it is noticeable (from Table 4.19) that there was a good deal of agreement between the two administrations which were a full year apart (end of Phase II and Phase III). This is partly a function of course of the fact that a good many of the same children were interviewed both times. But it is also partly a function of consistency of the children's feelings toward the NH classes; and partly a function of the instrument and guided interview used to obtain the answers.

Consistent in consistencies

This consistency of answers would tend to support the notion that NH children, who are often characterized as unpredictable, are in a sense "predictably unpredictable". This may mean that if the NH conditions are properly understood their effects may be predictable and may explain how, when, and why the NH child deviates from predictions for the normal child.

More friends and beliefs on having "learned"

Second, it was interesting that the highest percentages (88% in Phase II and 91% in Phase III) had to do with the children's expressed feelings of whether they had learned in the NH class. However, when this was qualified by comparison with regular classes a noticeable reduction occurred (58% in Phase II, 60% in Phase III). Perhaps this is partially explained by the wish to return to regular class at <u>some</u> time. This desire had the second highest percentages (79% and 83%). This would seem to contra-indicate the danger that the children in the special classes became "institutionalized" or "too happy" with a sheltered or protecting environment. They also report having fewer friends in the small classes. How far the desire for more friends is tied in with the desire to return to a regular classroom is also an interesting speculation. The feeling of lacking friends may be a feature of the NH syndrome that is independent of school because many NH children have difficulty with keeping friends in their neighborhoods.

Achievement tests lack data

Learning achievement appeared retarded for both special and regular class groups. Other than this, very little can be said. In either group there were few cases for whom repeated scores on measures were received. In some instances these cases were reduced almost to the vanishing point, especially in the regular class group where the numbers sank as low as 4 or 5 cases. The data are given in the preceding chapter mainly for the sake of completeness of the record.

Show learning difficulty

Even had the numbers been larger, comparisons between the groups would have been risky for lack of equated teaching methods, or on account of other uncontrolled factors as mentioned elsewhere. Yearly gains, where data was available, appeared quite modest. They usually amounted to less than a year's expected gain and thus again demonstrated the handicap in learning under which NH children struggle.

Medical Findings

Among the many interesting medical findings only a few are commented on briefly here.

Agreement between medical diagnoses

Of considerable interest was the conclusion of the medical re-evaluation team that the original diagnosis of suspected or confirmed NH had been substantially correct in about 80 per cent of the cases, equivocally correct in 13 per cent, and in error in only about 7 per cent. This amount of agreement could have been more favorable than usual because one of the physicians had previously seen the reports of the initial diagnoses.[1] This circumstance might have been conducive to re-check agreement.

Ways to minimize medical disagreement

Complaints are often heard that physicians give non-agreeing reports or diagnoses on NH, or on differential diagnoses between NH and emotional disturbance. This is no doubt true. However, there are ways of minimizing such non-agreement and the situation is far from hopeless.

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1 As a member of the Review Team, Dr. Zike saw the results of other physicians' examinations, but he did not examine the children himself until one year later.

It seems likely that the great majority of cases of non-agreement can be resolved by the following conditions or procedures.

First, the physicians concerned should be informed about, oriented toward, or fully conversant with the syndrome. Second, differences and distinctions of nomenclature, such as "brain-damaged", "hyperactive", "organic", and so forth, should be resolved. Third, the physicians should have access to all the facts, many of which must be systematically sought from and contributed by parents, educators, psychologists, speech pathologists, and others, so that the presence of many minimal or 'soft' signs can be seen in conjunction.

Fourth, the facts should include as many psycho-physiological laboratory findings as possible, for example EEGs, flicker fusion, spiral after-effect, visual field tests, and so forth. Fifth, the data and especially the positive indications, should be organized and listed in some written form for easy and repeated reference.

Sixth, the physicians should have access to each other, so that observations and opinions by one may be checked and accepted or ruled out by the other. Seventh, if possible a panel or board of several physicians should be employed. The nucleus for such a board could well be a pediatrician, a neurologist, an electroencephalographer, an endocrinologist, and a psychiatrist. It is also desirable that the latter four specialists share the pediatrician's familiarity with children's cases.

EEG results in line with general literature

The relative absence of classical neurological signs (12%) was consistent with prior experience and reports in the literature. The EEG findings (37% definitely abnormal, 38.5% equivocal, and 34.5% normal) were also in line with previous reports of 60-70% questionable records in delinquency and behavior problem groups (Oettinger, 1958; Burks, 1955; Hanvik, 1961).

Chapter VII

SUMMARY AND CONCLUSIONS

This was a six year exploratory field study with three distinct phases of development and enlargement. Pupils were aided in small special classes and in regular classes. In Phase II an attempt was made to study and to compare results on 64 cases assigned to special classes with 52 cases assigned to regular classes. Matching or equating of these two groups was not performed. Completeness of test results was not obtained. The special class group was on the average one semester older than the regular class group. Also, in the special class group, 45% of the cases were actually or potentially restricted from ordinary classes as against 15% of similar cases in the regular class group. Having older and more severe cases would seem to be disadvantageous factors for the special class group.

The balance of the chapter follows the order of the major objectives listed for the study in Chapter II. Some of the conclusions mentioned are based on opinions rather than quantitative facts. These conclusions are determinable from the context or from inclusion in parentheses.

General purpose

The general purpose of this study was to try out a feasible and promising form of special education for NH children in a public school setting. This general purpose was fulfilled in that eight small special classes of from six to ten children each were successfully operated in eight different locations by 15 participating school districts for a period of at least two years.[1] The fact that at the end of Phase II six more classes were requested by the districts in the county probably indicates that the special classes met at least some needs of NH children successfully.

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[1] Six years in San Gabriel; five years in Palos Verdes.

There is not doubt that many NH children exist in the public schools. However, no data are established as yet as to the incidence of NH per 100 children in the various grades, or in various regions, or for various socio-economic levels. This concern awaits further study and is of basic importance.

Evidence in this study suggests that the sex differences may be an important factor in the incidence rate and that the rate may be very much higher in boys than in girls. The ratio of boys to girls may reach as high as 7:1. If priority for special class is given to those showing the disinhibition (hyperimpulsiveness) symptom together with other NH symptoms, the boy-girl ratic may rise to 15:1 in such a program.

Objective #2 Referral

NH children can be satisfactorily identified early in elementary schools. Screening and referral procedures were developed which identified such children quite successfully as potential NH cases warranting further diagnostic study. It was found that teachers can readily locate likely candidates for NH programs by the following steps: 1) listing those children who appear to them to have adequate IQs but who have marked difficulty in reading and/or spelling and writing, and/or drawing geometric and other forms; 2) employing a rating sheet (such as the Burks' Behavior Rating Scale); and/or 3) listing those children showing disinhibition (impulsiveness, hyper-activity, short attention span, emotional over-reactions, immaturity, etc.).

Objective #3 Diagnosis

NH children as defined in this report may be diagnosed with sufficient accuracy to warrant placement in a program of special education. In the present study, a team of two physicians furnished by the state re-examined the children admitted to the project on the basis of earlier diagnoses by school, agency, and family physicians. The second set of diagnoses concurred with the earlier diagnoses in 80 percent of the cases; concurred with reservations in an additional 13 percent; did not concur in 7 percent. This must be ranked as substantial and serviceable agreement.

After screening and referral, diagnosis may be accomplished by the following psychological and medical measures and procedures:

1. An intelligence test (WISC) which shows a total IQ that is not defective, but has an uneven pattern of high and low subtest scores. Low subtest scores were found most frequently on Information, Arithmetic, Coding, and a (raw score) discrepancy of two or more between Digits Forward and Backward.
2. Poor test scores on measures of visual perception such as the Bender Gestalt, Goodenough Draw-A-Man, or the Copy-A-Diamond Test (Binet), and similar perceptual tests.
3. A history of: unduly rapid or prolonged delivery or other pre- or postnatal complications; or anomalous or slow development; or similar conditions in parents or other relatives; or fevers, toxins, or traumas. (See physicians' report in Chapter V.)
4. An abnormal EEG. A negative or 'normal' EEG does not rule out pathology. Routine EEGs often miss known pathology and special EEGs may be needed using sleep; medication; or photic, sonic, or other stimulation.
5. A pediatric and neurological medical examination by one or more physicians oriented to the problems of mild MH. (A board of several physicians including a pediatrician, a neurologist, an electroencephalographer, and a psychiatrist seems recommended at this time.)

(The ultimate responsibility for diagnosis of the medical condition rests with the physician or medical specialist. Only a licensed physician can legally assume responsibility for diagnosis and treatment of physical conditions. However, the physician is dependent upon others for referral of suspected cases.)

(The ultimate responsibility for identifying suspected cases and referring them for diagnosis rests with the parent. If and when the parent does not recognize or exercise this responsibility, it is incumbent upon the school and other public agencies to protect the child by assuming and discharging some part of the referral responsibility.)

(The ultimate responsibility for educating the child rests with the public school. But it cannot discharge this responsibility against all odds. Like the physician and the parent, it requires certain conditions and the help of others.)

The jointly shared responsibilities just mentioned require that interdisciplinary cooperation must be established, and must be adequate. For NH children it appears to require the services of the following professional workers: teachers, administrators, special curricular consultants, school psychologists, school welfare and social workers, school nurses, school physicians, family physicians, specializing physicians oriented to NH and to electroencephalography, and workers in community health agencies.

Objective # 4

Placement, admission, discharge, and attendance

For a special education program an Admissions and Discharge Committee consisting of the school personnel mentioned above can convene and formally admit or discharge a pupil to or from the special education program. This committee should welcome and be augmented by the nonschool personnel mentioned above whenever the latter have sufficient interest and time to devote to a particular case or to the general problem.

The work of the committee will be expedited and improved by the use of multiple copies of a summarizing and processing form such as the one developed for this study. (See Form 60-1 in the Appendix.) The committee should meet regularly with well-prepared work-ups for initial cases and well-prepared follow-up data for potential discharge cases.

(No child should be admitted to the special education classes if it appears that his mental health would be jeopardized more than would be the case with his handicap in the regular classroom. No child should be admitted to the special class program without the written request of at least one parent and preferably both. It was the recommendation of some committee members that both parents of an NH pupil should ordinarily be required to attend a minimum of one meeting per month of an informational-discussional parent group if the child is to attend a special NH class. Discharge from special class should take place at the recommendation of the Admissions and Discharge Committee, or automatically and immediately upon the written demand of the parent(s) if they refuse to follow professional advice. A signed statement of such refusal might be requested by the school.)

A fundamental conclusion from this study is that hyperactive, impulsive, underachieving boys <u>can</u> be contained and instructed in small special classes of from six to ten pupils for a minimum school day. A large percentage (45%) of the special class cases studied had been previously excluded, suspended, given a home teacher, allowed to attend regular class for only part of a day, or were being considered for such measures as they entered Phase II. The great majority of them remained in the same school; special class for 2 or 3 years. Many may have been at 'turning points' in their development and may have been influenced by special class so as to decrease the chances of future institutionalization for delinquency or mental illness. Such institutionalization did occur in four cases in the regular class group whereas none occurred in the special class group even though on the average the latter were older and more severe cases. Too few of these cases occurred and conditions were not sufficiently controlled for this finding to be statistically significant.

An NH program can be instituted in a public elementary school at least as early as second grade level, as was done in this study. There is no evidence as yet that it could not be started with some modification in kindergarten or in first grade.

Objective # 5 Curriculum and treatment

The present study did not systematically prescribe and compare various special instructional methods and contents. Therefore, it can only report a subjective conclusion on the part of teachers and committee members that a) over the course of the study special class teachers found it necessary to change from a more permissive approach, which was their first choice, to a more structured and directive approach; and b) that the latter seemed to meet the needs of the NH pupils better, perhaps because it freed them from too many conflicting impulses arising from too many stimulating choices.

Experience and opinion from this investigation make it seem probable that sound systems of guidance and instruction must in the future take account of at least the following variables: 1) age; 2) degree or severity of disinhibition; 3) amount and kind of perceptual distortion; 4) extent and kind of memory loss; 5) extent and kind of psychological and emotional disturbance present or imminent if any; 6) extent of parental understanding and cooperation; and 7) extent of medical study and supervision available.

Parental cooperation and gradually expanding understanding is much easier to develop around a special class program than a regular class program. This study shows that parental support and understanding can definitely be achieved, and may even develop spontaneously. (As was not done in this study, a pledge of parental attendance at monthly meetings should probably be secured at the outset, or the child should probably be suspended or given limited or home instruction until such cooperation is secured.)

Objective # 6 Evaluation

Evaluation of progress of NH children by objective means is possible in several ways. The diagnostic measures and procedures mentioned above can be repeated to show progress, plateau, or deterioration. Samples of the child's work in reading, spelling, writing, arithmetic, and graphic art can be collected monthly and evaluated by a committee of experienced teachers and psychologists. Such a committee was not actually secured or used in this study. However, teachers did find it possible to select representative samples (or else the best and poorest samples) of a child's work for the month and to fill out and attach to the sample a checksheet giving details of the child's performance. (See sample forms in the Appendix.) Cumulative anecdotal records or behavior journals were also kept by some teachers and contained valuable evidence for evaluation.

Academic growth at the rate of about one-half year per year may be expected for the first one or two years, and perhaps a better rate in the third year, even though the special program is carried on, as this one was, without recommended curricular methods, without curricular supervision, and without teachers previously trained or experienced in NH education. With additional curriculum refinement and teacher training, the rate of academic progress may increase. A substantial percentage of NH children, perhaps a majority, may be able to return for most of their needs to larger classes after two or three years, or earlier if their hyperimpulsiveness and distractibility abates. This conclusion is tentative and needs to serve as a hypothesis for further investigation.

Objective # 7 Teacher qualifications

There is evidence from teachers' verbal reports and from their requests for reassignment that teaching a special NH class is more taxing than teaching a regular class. Therefore, reserves of health, endurance, and patience are needed by teachers of special NH classes.

There is also evidence in this study that men may give more continuous service than women as teachers of NH special classes, at least under the conditions that existed in this study (ages and grades taught, boy-girl ratios, lack of curricular consultative or supervisory services for the teachers, lack of specified instructional content and teaching methods, and so forth).

It is possible to inaugurate a research program, as was done in this study, with only a workshop of several days for teacher training and with several orientation meetings for physicians. However, this minimum should be avoided if at all possible and is contra-indicated for a service program.

Chapter VIII

RECOMMENDATIONS

On the basis of this study, the following recommendations are submitted for the future:

1. The efficacy of various curricular approaches should be objectively tested and demonstrated. This will require pre-delineated procedures, systematically applied, with equated cases and for equal periods of time. The following are examples of curricular variables which need investigation: a) reduced- and controlled-stimulus classrooms (monochrome walls and floors, individual study-booths for pupils, one-way vision booth for visitors, highly structured and stable daily routines) versus regular classrooms, or partially modified classrooms; b) use of less drastically altered rooms, especially in a child's second or subsequent years in the special program; c) use of teacher-assistants for preparation of many short-unit consumable lesson materials, preliminary checking of work turned in, relief of teacher during recess and lunch periods, etc; d) use of itinerant teacher to travel to regular classrooms to tutor NH children for certain periods; e) use of a resource room teacher to whom NH children are sent on various schedules or for various kinds and amounts of help; f) use of servo-instructional aids (pupil-operated instructional 'machines') g) optional ages or grades for entry to NH program (K, 1, 2, 3, or higher?). Practices of value for NH children at the secondary levels of education have hardly been explored and need much pioneer investigation.

2. The question of incidence of NH in the school population is a basic concern which should be given immediate and intensive study. A well-designed study to answer this pressing question could be of great benefit for educational planning and improvement.

3. Many new diagnostic measures should be investigated and evaluated. Examples include: a) a number of psycho-physiological measures such as the electro-oculogram test, visual flicker-fusion test, the auditory flutter-fusion test, the tactile vibratory-fusion test, the spiral after-effect test; b) various electroencephalographic techniques (nasal leads, 'deep' electrodes, photic or other stimulation or medication) including portable transistorized EEG equipment which can be operated at schools; c) a number of newer psycho-perceptual measures such as the Ayres Form Boards,[1] the Frostig Tests of Perception,[2] and the Howe Peg Board.[3]

4. Teacher-training facilities for special NH teachers should be encouraged and geared into further research. It seems reasonable that studies in the pathology of NH children and in the use of specified materials and methods of classroom management would constitute important qualifications for teachers. However, this remains to be determined, as well as the courses and hours necessary to foster such qualifications. A patient, methodical, firm, but kindly personality structure may also be required, but this too remains to be proven experimentally.

5. The question of whether there are various subtypes of NH which can be distinguished should be prosecuted for the possible light which might be shed on the following

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[1]Experimental test being developed by Miss A. Jean Ayres, Coordinator, Department of Occupational Therapy, University of Southern California, Los Angeles 7.

[2]Experimental test being developed by Marianne Frostig, Ph.D., Director, Marianne Frostig School, 7257 Melrose Avenue, Los Angeles 46.

[3]Experimental test being developed by John W. Howe, 1110 Madre Vista Road, Altadena, California.

important considerations: a) various causative processes; b) various means of prevention; c) selectively effective medical treatment; and d) differentially effective psychological and educational treatment. Examples of possible future discoveries would be propositions such as the following: that disinhibition (hyperactivity, short attention span, excessive emotional reaction, etc.) is not always associated with poor perception or poor memory; or that poor perception or poor memory are more often hereditary while disinhibition is more often the result of injury; or that disinhibited cases might benefit from different medications than those required by the others; or that as compared to disinhibited cases, perception or memory cases might be a different educational entity, requiring special perceptual or memory training, but in larger, more permissive classes which would also be more economical. The possibility that various metabolic or endocrine subtypes have a symptomatology similar to the NH syndrome needs to be systematically explored.

6. The influence of socio-economic-cultural factors on NH children, teachers, and parents should be ascertained experimentally.

7. Legislative clarification and support of special education for NH children should be given careful study by the State Department of Education.

8. Future studies should be planned for an initial period of at least three years since there is evidence that many NH children require at least this interval of special instruction. Control groups should be used in such studies to provide a base-line from which to reckon any additional progress made by experimental groups.

9. Parent groups should be formed in order to utilize and channelize the potentials for mutual support and understanding which parents can furnish each other, their children, and the professional workers trying to assist them.

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Hudson
Lennox
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Palos Verdes Peninsula Unified
Rosemead
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Westside Union

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Manhattan Beach
Redondo Beach
Palos Verdes Peninsula Unified

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Little Lake City School District

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APPENDIX A

SELECTED WORKING DOCUMENTS

ROUGH DRAFT
May 22, 1958

SAMPLE DOCUMENT NO. 1

COMMITTEE USE ONLY

Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT FOR NEUROLOGICALLY HANDICAPPED CHILDREN

STATEMENT OF MAIN HYPOTHESIS

Neurologically handicapped children in small special classes of ten or fewer will make greater academic and/or social and emotional gains than will similar children in regular classes, even though opportunities are equalized for both groups as far as feasible by employing the following procedures:

1. The teachers attempt to employ special curriculum methods (emphasizing an approach which is concrete vs. abstract, segmental vs. wholistic, motor-kinaesthetic vs. verbal, repetitive vs. non-repetitive, etc.).

2. The teachers attempt to maintain well-structured and recognized limits for acceptable behavior rather than non-directive or less apparent limits.

3. Professionally led group discussion meetings are held throughout the school year for the teachers.

4. Professionally led group discussion meetings are held throughout the school year for the parents.

5. The children receive medication if prescribed by their physicians.

JWH:hrm
5-22-58
#26518

SAMPLE DOCUMENT NO. 2

ROUGH DRAFT

Los Angeles County Superintendent of Schools
Division of Research and Guidance

PILOT PROJECT FOR NEUROLOGICALLY HANDICAPPED CHILDREN

Brief Description of NHC Research Problem for Possible Submission to Research Foundations

I. PROBLEM

What is the role of mild neurological handicap (mild brain injury or anomalous development other than recognized conditions of CP, MR, severe epilepsy, etc.) as a factor requiring special education?

1. What, if any, are the chief symptoms (syndromes) of NHC? (Is there such a thing as the 'hyperkinetic syndrome' of Laufer and Denhof et al?)
2. What methods may be used in school districts to identify and/or diagnose cases of mild neurological handicap for purposes of special education?
3. What special methods may be utilized to teach neurologically handicapped children?
4. How effective are these special methods compared to regular class methods?
5. How expensive are the special methods in comparison with regular class methods, and is this special expense justified?
6. Approximately what is the incidence of neurologically handicapped children among elementary school children?

II. HYPOTHESES (stated in the null form):

1. There are no cases of mild neurologically handicapped children outside of such recognized syndromes as CP, MR, epilepsy, MS, MD, etc.

Brief Description of NHC Research
Problem for Possible Submission to
Research Foundation

2. If there are such cases, there is no common syndrome.
3. Mild NHC cases cannot be identified in the ordinary elementary school setting; or, if they can, it is not feasible for most school districts to attempt identification.
4. If NHC are identified, there is no significant difference between their educational and mental hygiene gains in special classes as compared to regular classes.
5. If educational and mental hygiene gains in special class exceed those in regular class, they are not sufficient to justify the extra expense.
6. The incidence of NHC in public schools is so small as to be insignificant, or not to warrant a program of special education.

JWH:hrm
#26457
4-23-58

SAMPLE DOCUMENT NO. 3

(Worksheet #1) For Committee Use Only

Los Angeles County Superintendent of Schools
Division of Research and Guidance

PILOT PROJECT FOR NEUROLOGICALLY HANDICAPPED CHILDREN

Report of Subcommittee Meeting, December 19, 1957

Working Definition of NHC

For present purposes, an NHC might be defined as follows:

> Any minor who by reason of a physical condition of the brain cannot receive the full benefit of ordinary educational facilities shall be considered neurologically handicapped, provided that such physical condition of the brain has been diagnosed by a properly licensed physician, and provided that such physical condition of the brain has not produced motor disabilities requiring special education for cerebral palsy, nor mental disabilities requiring special education for mental retardation.

This 'definition' follows in part the wording of Section 9602 of the Education Code which defines the physically handicapped:

> "Any minor, who by reason of a physical impairment, cannot receive the full benefit of ordinary education facilities, shall be considered a physically handicapped individual for the purposes of this chapter. Minors with speech disorders or defects shall be considered as being physically handicapped. Minors with physical illnesses or physical conditions which make school attendance impossible or inadvisable shall be considered as being physically handicapped."

JWH:hrm
#26236B
12-23-57

SAMPLE DOCUMENT NO. 4

(Worksheet #2) For Committee Use Only

Office of Los Angeles County Superintendent of Schools
Division of Research and Guidance

PILOT PROJECT ON NEUROLOGICALLY HANDICAPPED CHILDREN

Report of Subcommittee Meeting, December 19, 1957

I. Conditions and Criteria for Eligibility of a Given Pupil in the Pilot Project

A. The subcommittee tentatively suggests the following five criteria:

1. Diagnosis of brain impairment by an approved local medical specialist (who in the absence of a cooperating family physician may make the referral for an EEG) with corroborative findings by the district school psychologist.

   The EEG report and the psychological report are desirable aids in enabling the medical specialist to arrive at his diagnosis; by themselves, however, these reports do not constitute either a positive or a negative diagnosis.

2. Total I.Q. above the defective range, as evidenced by the report of a school psychologist.

3. Evidence of marked academic and/or behavior difficulty in regular class.

4. Parental request for placement in the special NH program and continued parental cooperation with such placement.

5. Final admission to the program by action of a local committee on admissions, consisting of the district administrator or his designates, the school psychologist, (and the school physician or nurse, the school principal, and, if available, teachers who are interested in the child's placement or are well acquainted with his work?).

JWH:hrm
#26236C
12-23-57

SAMPLE DOCUMENT NO. 5

(Worksheet #3) For Committee Use Only

Office of Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT ON NEUROLOGICALLY HANDICAPPED CHILDREN
Report of Subcommittee Meeting, December 19, 1957

Special Needs of Neurologically Handicapped Children

The following may prove to be the temporary, semi-permanent, or permanent special needs of the NHC, depending upon the individual case:

1. Increased individual instruction and attention.
2. Decreased stimulation from the surrounding environment (e.g. small class, individual work booths, individual resting places, etc.).
3. Decreased 'competition' with regular class pupils for academic achievement.
4. Increased awareness that there are others with a handicap like his own.
5. Increased awareness that his handicap is not due to some fancied shortcoming or misdeed and that it is treatable and improvable.
6. Specialized instructional techniques in academic subjects (e.g. tachistoscopic exercises, drill in phonetic perception, in phonetic analysis, and in conversion into visual symbols; use of 'kinesthetic' word-cards; use of color-emphasized details in perceiving patterns, word-symbols, etc.).
7. More than average experience with concrete materials and situations.
8. More simplified, analyzed, 'atomistic' approach to new or complex tasks or subjects (less wholistic initial approach).
9. Larger amounts and more specific training in perception.
10. " " " " " " " memorization.
11. " " " " " " " lengthening of attention span.
12. " " " " " " " sensory-motor coordination and skills.
13. More teacher help against tendencies toward perseveration while responding.
14. More teacher help against tendencies toward acceleration while responding.
15. More teacher understanding and acceptance of 'explosive' emotional episodes resulting from neurological dysfunctioning.
16. Medication to improve -
    a. dysrhythmia
    b. impulse control
    c. 'seizure' control (if seizures of any kind are present).
17. Increased liaison and communication between teacher, principal, psychologist, nurse, parent, and physician with regard to medical, education, and other special needs.

JWH:hrm
#26236D
12-23-57

SAMPLE DOCUMENT NO. 6

Los Angeles County Superintendent of Schools
Division of Research and Guidance

SUBJECT: DIAGNOSTIC SERVICES FOR THE LOS ANGELES COUNTY SCHOOLS NEUROLOGICALLY HANDICAPPED CHILD PROJECT*
State of California
Department of Public Health

I. The Problem

The diagnosis of neurologic disease in children with minimal outward signs but serious functional deviation has been a difficult problem. Children so afflicted, however, present a major educational and social problem. State and local departments of education feel that many students may be so afflicted and have requested assistance in the medical diagnosis of this condition. The project described below constitutes a cooperative venture between the Bureau of Crippled Children Services of the State Department of Public Health and the State Department of Education. Described here are the services to be provided by Crippled Children Services in the project. The diagnosis of these children normally would be provided through the Diagnostic Centers for Neurologically Handicapped Children under Crippled Children Services through the regular program. This project will be funded out of diagnostic funds in the manner described below in order to conserve funds and expedite the examination of this group.

II. Objectives

A. The first objective is to assist the Departments of Education in obtaining medical diagnostic study of these children.

B. The second objective is to evaluate the physical and medical problems of these children in order to determine whether or not they should be considered possible candidates for services available under the State Crippled Children Services' Program.

III. Methods

A. Subjects

1. The number of subjects will be limited to those under study through the Pilot Project under the direction of the Superintendent of Schools of Los Angeles County through the Division of Research and Guidance. The number of children evaluated by CCS will not exceed 300.

2. The subjects will be those referred to the Pilot Project of the Los Angeles County Schools as proven or suspected

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*Copy of memorandum by Dr. Virgil Hanson and Mr. Charles Robinson, of the State Department of Public Health, dated February 9, 1959.

neurologically handicapped children.

B. Study Procedures

1. Place of examination

The children will be examined in clinics which for convenience will be held in designated schools in each participating school district.

2. Each child to be so examined will be first referred to CCS by the Pilot Project review team.

(Time of Examination: The clinics shall be scheduled in advance by the school districts and copies of clinic schedules forwarded to the district office of the State Crippled Children's Services at least two weeks in advance. Give names of children.)

3. Examinations

a. Each child will be examined by a pediatrician and a neurologist.

b. At the time of examination, the child will be accompanied by at least one of his parents or guardians.

c. No child will be examined without the written consent of a parent or guardian.

d. Content of examinations

It is desirable that the examining specialists should see the children as if they were unaware of a probable diagnosis and that the study of each child shall be as complete as possible. It is requested that the records of these examinations contain the following information in addition to a record of the findings of the examination:

(1) The major diagnosis.

(2) The major problem related to this diagnosis and how and when the problem has manifested.

(3) Any other diagnosis and conditions which the child may have.

(4) The child's developmental status.

(5) A statement of any psychological and/or social problems which may become evident in the course

of the examination.

(6) A statement of recommendations concerning treatment and future management of the case from a medical point of view even though it may not be possible to have these recommendations carried out for even a significant fraction of the children.

(7) Medication being given child at time of examination.

It is requested that the examining specialists allow enough time in each of their contacts with the child and his family to answer any questions which the families may have.

e. Referral for consultation and laboratory services

The subjects may be referred on an individual basis for any specific consultation or laboratory study necessary to establish the diagnosis. CCS referral procedures are detailed in the following section of this outline.

f. The pediatrician is requested to review the data collected through the CCS study of the child and any other data available in order to prepare a final coordinated summary of the diagnoses, the child's problems, and recommendations. These summaries may be prepared in cooperation with the neurologists.

g. Distribution of CCS reports

Copies of all clinic reports prepared in this study will be distributed as follows:

(1) One copy to examining physician.

(2) One copy to the review team, Los Angeles County Schools Pilot Project.

(3) The remaining copies will be sent to the CCS district office. Upon request, one of these copies will be forwarded from the District Office to the family physician when his name and address are supplied.

(4) Copies of consultation reports will be distributed as follows from the District Office.

(5) One copy to district (wherever child's file is).

C. The data collected through this Pilot Project will be subjected to study and analysis by the Bureau of Crippled Children Services. The cooperation of the participating clinicians in

the analysis of this data will be recommended.

D. Crippled Children Services' Referral Procedures

1. Face sheets

Each child referred to the Los Angeles County Schools Pilot Project for the neurologically handicapped or who has been previously accepted in the Project shall be identified by a CCS face sheet.

a. The face sheet shall be prepared by the school health nurse or other appropriate personnel designated by the Project review team.

(1) The face sheet shall be prepared in triplicate.

(2) The face sheet shall be distributed as follows:

(a) One copy remain in the Project review team's record.

(b) Two copies will be forwarded to the Los Angeles District Office of the State Crippled Children Services, 703 State Building, 217 W. First Street, Los Angeles 12, California.

(3) Face sheets in sufficient quantity will be forwarded to Mr. John Howe of the Division of Research and Guidance for distribution to the school districts.

2. Reports of examinations in the clinics may be dictated into a recording machine. The records will be transcribed by personnel designated by the Division of Research and Guidance of the Los Angeles County Schools. These personnel may distribute the copies as follows:

a. One copy to the examining physician

b. One copy to the Project review team

c. The remaining copies to the CCS District Office

3. Reports will be transcribed onto standard CCS clinic forms.

4. Referral for individual consultation

a. The clinic physician referral should be to a specific name consultant with the provision that this consultant must be a consultant authorized to see patients under the State Crippled Services' Program. Consultations will be arranged through the State CCS District Office.

b. The clinic physician may notify the District Office by

telephone of the desired consultation.

(1) The District Office authorizes the consultant.

(2) The consultant arranges for the appointment for the family.

(3) The request for consultation should be confirmed in the clinic report.

5. Referral for laboratory services

a. The Project clinic physicians are asked to determine in advance the laboratory facilities they wish to use in any particular area and to refer the patients to specific laboratories' facilities.

b. Referral for laboratory or x-ray study is made by the Diagnostic Laboratory Form CCS-1190. Two copies of this form are given to the patient by the clinician to take to the specified laboratory. The laboratory returns one authorization slip with their billing to the Los Angeles District Office in the State Crippled Children Services.

BJJ:hrm
3-9-59
#27424

APPENDIX B

SELECTED FORMS

SAMPLE FORM NO. 1

Los Angeles County Superintendent of Schools
Division of Research and Guidance

PILOT PROJECT FOR NEUROLOGICALLY HANDICAPPED CHILDREN

Clarification and Recapitulation of

Minimal Criteria for Inclusion

of Cases in the Study

1. Positive or suspected diagnosis of neurological handicap (or impairment) by licensed M.D. (or D.O.).

   If possible, state degree: mild, moderate, severe; and localization: unilateral, bilateral, focal or non-focal, etc.

2. Difficulty in regular class (as in A *or* B, *or* C below).

   A. Marked 'behavior difficulty' of the hyperactive type. (See description of hyperkinetic behavior syndrome by Laufer and Denhof below.)

   B. Marked learning difficulty.

      1) For ages 8-6 or older — two or more years retardation on a standardized reading test as recent as 1 year.

      2) For ages 7-9 to 8-6, teacher judgment of pronounced reading difficulty.

   C. A combination of difficulties A and B.

3. Requisite grade — as of September 1, 1958, must

   a) have had at least 1 year in grade 1.

   b) be in grade 5 or below in a K-6 school.

   c) be in grade 7 or below in a K-8 school.

4. Requisite total I.Q. of 80 or above as recent as 1 year.
   Ineligibility for Special Class for M.R.

5. Requisite Snellen-type test as recent as 1 year showing at least 20/70 in the better eye with lenses.
   Ineligibility for Special Class for Sight-Saving.

6. Requisite audiometric test as recent as 1 year showing not more than 40 decibel loss at 1 speech frequency in either ear.
   Ineligibility for Special Day Class for Hard-of-Hearing.

7. Requisite motor ability — no gross motor symptoms.
   Ineligibility for Special Class for C.P.

8. Uneven psychometric pattern showing evidence of average or good abilities (on WISC, subtest scale scores of 9 or above) coupled with some sharply reduced abilities (scale scores of 7 or below); or visual-perceptual-memory handicaps as on Bender, Draw-A-Man, Copy-A-Diamond, etc.; or both.

9. Parental request for *either* form of special help for children with mild neurological handicaps (special *or* regular class).

(A subcommittee report prepared by Jones, Burks, and Howe, pursuant to request of general meeting, May 23, 1958.)

Laufer, M. W. and E. Denhoff: *Hyperkinetic Behavior Syndrome in Children,*' Journal of Pediatrics, St. Louis, Vol. 50, No. 4, pp. 463-474 (April 1957), list the following as symptoms characteristic of the 'organic behavior syndrome' first described by Bradley: (1) hyperactivity, (2) short attention span and poor concentration, (3) variability, (4) impulsiveness and inability to delay gratification, (5) irritability, (6) explosiveness, and (7) poor school work.

JWH:sm
#26539 MU
6-5-58

SAMPLE FORM NO. 2

Office of Los Angeles County Superintendent of Schools
Division of Research and Guidance

CONFIDENTIAL

PARENT OPINIONNAIRE FOR NEUROLOGICALLY HANDICAPPED CHILDREN

Date _____ (Yr. Mo Day)

Pupil's Last Name _____ First _____ Middle _____ M or F _____ Case # _____

Birth Date _____ (Yr. Mo. Day)

Age _____

School District _____ School _____ Teacher _____ Grade _____

Check to show how child has been this school year.
Check again to show how this compares with last school year.

	As child has been this school year			Compared with last school year		
	Often	Sometimes	Seldom	More frequently this school year than last	Less frequently this school year than last	Same this school year as last
1. Does he flare up easily?						
a. In what situations?						
b. Are you upset by this behavior?						
2. Does your child seem easily defeated?						
a. What symptoms does he show?						
b. Are you upset by this behavior?						
3. Does he seem unusually fearful?						
a. What fears does he have?						
b. Are you upset by this behavior?						
4. Does he often become stubborn?						
a. In what situations?						
b. Are you upset by this behavior?						

Check to show how child has been this school year.
Check again to show how this compares with last school year.

	As child has been this school year					
	Often	Sometimes	Seldom	More frequently this school year than last	Less frequently this school year than last	Same this school year as last
5. Do you find it hard to discipline him?	—	—	—	—	—	—
What are the ways you have found to be effective?						
6. Is he destructive toward his own or others' possessions?	—	—	—	—	—	—
7. Does he seem to have a poor memory for written words?	—	—	—	—	—	—
recent events?	—	—	—	—	—	—
past events?	—	—	—	—	—	—
8. Does he appear to be a clumsy child?	—	—	—	—	—	—
9. Do you find he is changeable in moods?	—	—	—	—	—	—
10. Does he express unusual energy?	—	—	—	—	—	—
lack of energy?	—	—	—	—	—	—
11. Does his imagination seem uncontrolled?	—	—	—	—	—	—
12. Is he poor at drawing?	—	—	—	—	—	—
13. Does he have trouble in pronouncing words?	—	—	—	—	—	—
14. Does he have difficulty concentrating?	—	—	—	—	—	—
Give specific illustrations of area in which attention span is good and where it is poor.						
15. Does he appear to be irritable?	—	—	—	—	—	—
16. Does he have trouble resting?	—	—	—	—	—	—
17. Does he have trouble making friends?	—	—	—	—	—	—
keeping friends?	—	—	—	—	—	—
18. Is he easily confused?	—	—	—	—	—	—
19. Is he impulsive?	—	—	—	—	—	—
20. Are his feelings easily hurt?	—	—	—	—	—	—

JWH:BJJ:em
#27539 MU
5/14/59

SAMPLE FORM NO. 3

Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT FOR NEUROLOGICALLY HANDICAPPED CHILDREN

CHILD OPINIONNAIRE

I am asking a lot of children some questions about school. I want you to answer them as carefully and honestly as possible. I'll write down your answers, but not your name, and no one else will see these papers, not even your teacher.

1. Would you like to go back to regular class?

   Yes_____ No_____

   Now_____ or Later_____

   Why?_____

   _____

   _____

   _____

   _____

2. Have you liked being in this class?

   Yes_____ No_____

   More than in regular class? Yes_____ No_____

   Less than in regular class? Yes_____ No_____

   Why?_____

   _____

   _____

   _____

   _____

3. Do you think you have learned in this class?

   Yes_____ No_____

   More than in regular class? Yes_____ No_____

   Less than in regular class? Yes_____ No_____

   Why?_____

   _____

   _____

   _____

   _____

4. Do you have many friends now?

Yes_____ No_____

More than you had in regular class? Yes_____ No_____

Less than you had in regular class? Yes_____ No_____

Why?_____

_____

_____

_____

_____

5. What kind of children are in this class?_____

_____

_____

6. Why were you in this class?_____

_____

_____

_____

7. What kind of teacher is best for this class?_____

_____

_____

JWH:BJJ:hrm
5-31-60
#28613

SAMPLE FORM NO. 4

Office of Los Angeles County Superintendent of Schools
Division of Research and Guidance

A P P E N D I X A

BURKS' BEHAVIOR RATING SCALE

Name _____ Age _____ Grade _____

Teacher _____ School _____ Date _____

Please rate each and every statement by putting an X in the appropriate square after the statement. The squares are numbered from 1 to 5 and represent the degree to which you have noticed the described behavior. The bases for making a judgment are given below:

(1) You have not noticed this behavior at all.
(2) You have noticed the behavior to a slight degree.
(3) You have noticed the behavior to a considerable degree.
(4) You have noticed the behavior to a large degree.
(5) You have noticed the behavior to a very large degree.

Vegetative-Autonomic

	Rating Scale				
	(1)	(2)	(3)	(4)	(5)
1. Hyperactive and restless					
2. Erratic, flighty, or scattered behavior					
3. Easily distracted, lacks continuity of effort and perseverance					
4. Behavior goes in cycles					
5. Quality of work may vary from day to day					
6. Daydreaming, alternating with hyperactivity					
7. Explosive and unpredictable behavior					
8. Cannot seem to control self (will speak out or jump out of seat)					
9. Poor coordination in large muscle activities (games, etc.)					

Perceptual-Discriminative

10. Confusion in spelling and writing					
11. Inclined to become confused in number processes; gives illogical responses					
12. Reading is poor					
13. Lacks a variety of responses; repeats himself in many situations					
14. Upset by changes in routine					
15. Confused in following directions					
16. Confused and apprehensive about rightness of response; indecisive					
17. Classroom comments are often "off the track" or peculiar					
18. Difficulty reasoning things out logically with others					

Social-Emotional

19. Demands much attention					
20. Tends to be destructive especially of the work of others					
21. Many evidences of stubborn uncooperative behavior					
22. Often withdraws quickly from group activities, prefers to work by self					
23. Constant difficulty with other children and/or adults (apparently purposeless)					
24. Shallow feeling for others					
25. Cries often and easily					
26. Often more confused by punishment					
27. Seems generally unhappy					
28. Often tells bizarre stories					

HFB: EM
#27090 MU - 9/8/58

SAMPLE FORM NO. 5

Los Angeles County Superintendent of Schools
Division of Research and Guidance

SOUTHWEST SCHOOL DISTRICTS

SURVEY OF NEUROLOGICALLY DAMAGED CHILDREN IN GRADES 3RD THROUGH 6TH WHO ARE ABOVE POINT 1 MENTAL ABILITY
(Report by Dr. Keith Hunsaker - June 12, 1956)

District	Previously med. diag. as neurol. handicapped	Reported by teachers as being difficult to keep in reg.class	Suspected-ed neurol. damaged by Comm. at 1st screening*	Recom. for neurol. exam. by Comm.at 2nd screening**	Seen at clinic***	Diagnostic Clinic Results									
						Diag. of neurol. damage	EEG or further neurol. recommended	Medication recommended	Special Class Recommendation						
									No.	M.	F.	Grades			
												3rd	4th	5th	6th
Hawthorne	1	58	17	10	11	9	9	7	8	6	2	3	2	1	2
Inglewood	1	25	13	3	4	3	3	2	3	3		3			
Lawndale	2	45	28	6	10	9	9	8	6	6		1	4	1	
Lennox	1	16	5	4	3	3	2	2	2	2			1		1
Torrance	4	79	32	4	4	4	4	4	3	2	1	1		1	1
Wiseburn		14	5	3	5	3	3	3	3	3		1		2	
TOTAL	9	237	100	30	37	31	30	26	25	22	3	9	7	5	4

*Based on following from teacher: "Teacher's Information" form, "Pupil Behavior Rating Scale," pupil "Drawing of Diamond" and "Draw-A-Man" test.

**Based on the above information from the teacher plus the "Bender-Gestalt Test," "Memory for Design" sub-test from the Binet and the "Coding" sub-test from the WISC. There were a number of additional children the Committee felt were neurologically damaged but they wanted to secure additional information before recommending a neurological examination.

***A few children were seen at the clinic who were outside of the 3rd to 6th grade range or at the request of the district.
(R & G #25047:BJJ/hrm: 8-22-56)

SAMPLE FORM NO. 6

Los Angeles County Superintendent of Schools
Division of Research and Guidance

PILOT PROJECT FOR NEUROLOGICALLY HANDICAPPED CHILDREN

WORKSHEET FOR REVIEW TEAM

NAME _____ (LAST / FIRST / MIDDLE) DATE _____ (YEAR / MONTH / DAY)

DISTRICT _____ SCHOOL _____ BIRTH DATE _____ (YEAR / MONTH / DAY)

GRADE _____ TEACHER _____ AGE _____ (YEARS / MONTHS / DAYS)

I. NEUROLOGICAL FINDINGS, positive items only

EEG: + ___ - ___ (Check one) Where done _____

Date _____ Name of EEG Reader _____

II. MEDICAL HISTORY, positive items only

Audio Test - Date _____
Loss _____
Vision Test - Date _____
Defects _____

III. PSYCHOLOGICAL DATA Binet _____ Date _____ Given by _____

a. Individual Intelligence scores: Verbal _____ Perform. _____ Total _____

Date _____ WISC SUBTESTS (SCALE SCORES) Given by _____

Info	Compr	Arith	Sim	Voc	Dig S	# Forward / # Backward

Pic C	Pic A	Bl D	Ob A	Code A	Code B	Mazes

b. Bender

Bender Recall

Draw-A-Man

Diamond

Other Perceptual Tests

c. Additional tests

IV. EDUCATIONAL DATA

Date _____

a. Reading test score
(given within last year if child is age 8-6 or above)

b. Teacher judgment (ages 7-9 to 8-6)

c. Written communication ability (spelling, writing sentences, etc.)

V. BEHAVIOR DATA

a. Burks' Rating Scale

b. State EDC Data

1. Teacher's Rating of Pupil

2. Class Play or Class Pictures (K, 1, 2, 3)

3. Thinking About Yourself

c. Other

VI. FAMILY DATA

a. Parents' Opinionnaire

b. Other Information

VII. LOCAL DIAGNOSIS

Suspected____	Mild ____	Unilateral____	Focal ____
Probable ____	Moderate____	Bilateral ____	Diffuse____
Final ____	Severe ____		

General statement _____

_____

Localization _____

Other conditions present or suspected _____

Name of Doctor _____

Employed as: family physician _____ school physician _____

VIII. ELIGIBILITY

Action by review team: Approved for study _____

Not approved for study _____

Members present: _____

_____

_____

_____

_____

Date _____

JWH:EM
#26521 MU (Rev.)
6/9/58

To the Teacher: Please staple this sheet to the upper left corner of the child's paper. Please check or fill in the blanks which apply.

SAMPLE FORM NO. 7A-TEACHER RECORDS-MATHEMATICS
Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT FOR
NEUROLOGICALLY HANDICAPPED CHILDREN

Working Draft No. 2
February, 1959
(Form RP-1)
Recording and Processing Sheet:

MATHEMATICS

Pupil's Code Number_____

Identification

_____ Month_____ Day_____ Year_____
Pupil's Last Name First Date Child Did This Work

Grade or type of class (circle one): Regular grade 1,2,3,4,5,6,7,8, Spec. NHC

_____ _____ _____
Teacher's Last Name First Name of School Name of School District

Conditions

The attached work was done in class (not at home or elsewhere):

Is this concept new to child? Yes____ No____ If not, how long ago was it first introduced by present teacher? 1 day____ 1 week____ 1 month____ 1 semester____ 1 year____ more than 1 year____

On today's first attempt____ second attempt____ third (or more)attempt____
With help from the teacher: none____ some____ much____
With urging, encouraging or motivation by the teacher: none___some___much____
With help from another pupil: none___ some___ much___

Quality

This sample is representative of this pupil's usual____ best____ poorest____ work for this month. (If possible, teacher should submit a sample which is <u>usual</u> for the pupil. If this is not possible, <u>two</u> samples showing the best and the poorest work for the month should be submitted.)

Time

In doing this work, I would <u>estimate</u> that the pupil applied himself about ____ minutes of actual working time out of ____ minutes total time allowed. (If it happens that the time was recorded, rather than just estimated, check here___.)
Other facts about the time: Check to show whether work was done on a Monday___ Tuesday___ Wednesday___ Thursday___ or Friday____, and whether during the first hour of a day___ last___ or other hour of the day___.

If teacher has additional comments, use <u>reverse</u> side.

SPACE RESERVED FOR COMMITTEE PROCESSING

#27226A(Rev.)
JWH:hrm
2-17-59

SAMPLE FORM NO. 7B
TEACHER RECORDS
WRITTEN LANGUAGE

Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT FOR
NEUROLOGICALLY HANDICAPPED CHILDREN

Working Draft No. 2
February, 1959
(Form RP-2)
Recording and Processing Sheet:

WRITTEN LANGUAGE

o the Teacher:
lease staple this
heet to the upper
eft corner of the
hild's paper.
lease check or fill
n the blanks which
pply.

Pupil's Code No._____

dentification

_____ Month _____ Day _____ Year _____
Pupil's Last Name First Date Child Did This Work

Grade or type of class (circle one): Regular grade 1,2,3,4,5,6,7,8, Spec. NHC

_____ _____ _____
Teacher's Last Name First Name of School Name of School District

The attached is a sample of work done in class (not at home or elsewhere):

onditions

Copying model letters or words (cursive___ manuscript___) after tracing them first___ without tracing___

Writing letters or words from memory,
with no model visible____
just after a practice period____
words coming from a story pupil has heard___ has read___ has 'created' and dictated to teacher___
teacher calling or saying the letters or words and child writing them____
on first___ second___ third (or more) attempt___.

uality

This sample is representative of this pupil's usual___ best___ poorest___ work for this month. (If possible, teacher should submit a sample which is usual for the pupil. If this is not possible, two samples showing the best and the poorest work for the month should be submitted.)

Time

In doing this work, I would estimate that the pupil applied himself about___ minutes of actual working time out of ___ minutes total time allowed. (If it happens that the time was recorded, rather than just estimated, check here___.) Other facts about the time: Check to show whether work was done on a Monday___ Tuesday___ Wednesday___ Thursday___ or Friday___, and whether during the first hour of a day___ last___ or other hour of the day___.

If teacher has additional comments, use reverse side.

SPACE RESERVED FOR COMMITTEE PROCESSING

27226B(Rev.)
WH:hrm
-17-59

o the Teacher:
lease staple this
heet to the upper
eft corner of the
hild's paper.
lease check or
ill in the blanks
hich apply.

SAMPLE FORM NO. 7C
TEACHER RECORDS

BLACK AND WHITE DRAWINGS

Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT FOR
NEUROLOGICALLY HANDICAPPED CHILDREN

Working Draft No. 2
February, 1959
(Form RP-3a)
Recording and Processing Sheet:

BLACK AND WHITE DRAWINGS

Pupil's Code No._____

denti-
ication

_____ _____ Month Day Year
Pupil's Last Name First Date Child Did This Work

Grade or type of class (circle one): Regular grade 1,2,3,4,5,6,7,8, Spec.NHC

_____ _____ _____ _____
Teacher's Last Name First Name of School Name of School District

Condi-
tions

The attached black and white drawing was made in class (not at home or elsewhere):

From a copy or model___
With straight edge___ compass___ curve-guide___ lettering guide___
other (specify)_____
With previous instruction or practice supervised by the teacher for drawing this particular object or scene_____
At teacher's request or suggestion that he draw this particular object or scene____
At teacher's request or suggestion that he draw something, but not necessarily this object or scene____
On his first attempt___ second attempt___ third (or more) attempt____
With technical help from the teacher: none___ some___ much___
With urging, encouraging or motivation by the teacher: none___ some___ much___
With help from another pupil: none___ some___ much___
When many colors were___ were not___ available to this pupil.

Quality

This sample is representative of this pupil's usual___ best___ poorest___ work for this month. (If possible, teacher should submit a sample which is usual for the pupil. If this is not possible, two samples showing the best and the poorest work for the month should be submitted.)

Time

In doing this work, I would estimate that the pupil applied himself about___ minutes of actual working time out of___ minutes total time allowed. (If it happens that the time was recorded, rather than just estimated, check here___.)
Other facts about the time: Check to show whether work was done on a Monday___ Tuesday___ Wednesday___ Thursday___ or Friday___, and whether during the first hour of a day___ last___ or other hour of the day___.

If teacher has additional comments, use reverse side.

SPACE RESERVED FOR COMMITTEE PROCESSING

#27226C(Rev.)
JWH:hrm/2-17-59

SAMPLE FORM NO. 7D
TEACHER RECORDS — COLOR DRAWINGS

Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT FOR
NEUROLOGICALLY HANDICAPPED CHILDREN

Working Draft No. 2
February, 1959
(Form RP-3b)
Recording and Processing Sheet:

COLOR DRAWINGS, ETC.

To the Teacher:
Please staple this sheet to the upper left corner of the child's paper.
Please check or fill in the blanks which apply.

Pupil's Code No._____

Identification

_____ Month _____ Day _____ Year _____
Pupil's Last Name First Date Child Did This Work

Grade or type of class (circle one): Regular grade 1,2,3,4,5,6,7,8, Spec.NHC

_____ _____ _____ _____
Teacher's Last Name First Name of School Name of School District

Conditions

The attached color drawing or painting was made in class (not at home or elsewhere):

From a copy or model____
With straight edge___ compass___ curve-guide___ lettering guide___
other (specify)_____
With previous instruction or practice supervised by the teacher for drawing this particular object or scene____
At teacher's request or suggestion that he draw this particular object or scene____
At teacher's request or suggestion that he draw something, but not necessarily this object or scene____
On his first attempt___ second attempt___ third (or more) attempt___
With technical help from the teacher: none___ some___ much___
With urging, encouraging or motivation by the teacher: none___ some___ much___
With help from another pupil: none___ some___ much___
When many other colors were___ were not___ available to this pupil

Quality

This sample is representative of this pupil's usual___ best___ poorest___ work for this month. (If possible, teacher should submit a sample which is usual for the pupil. If this is not possible, two samples showing the best and the poorest work for the month should be submitted.)

Time

In doing this work, I would estimate that the pupil applied himself about ___ minutes of actual working time out of ___ minutes total time allowed. (If it happens that the time was recorded, rather than just estimated, check here___.)
Other facts about the time: Check to show whether work was done on a Monday___ Tuesday___ Wednesday___ Thursday___ or Friday___, and whether during the first hour of a day___ last___ or other hour of the day___.

If teacher has additional comments, use reverse side.

SPACE RESERVED FOR COMMITTEE PROCESSING

7226D(Rev.)
H:hrm
17-59

To the Doctor, Nurse, Parent, Principal or Teacher: Please check or fill in the appropriate blanks.

SAMPLE FORM NO. 7E - MEDICATION RECORD

Los Angeles County Superintendent of Schools
Division of Research and Guidance
PILOT PROJECT FOR
NEUROLOGICALLY HANDICAPPED CHILDREN

Working Draft No. 1
November, 1958
(Form RP-5)

MEDICATION RECORD

Pupil's Code No._____

Identification

_____ _____ Month_____ Day_____ Year_____
Pupil's Last Name, First Date

Grade or type of class (circle one): Regular grade 1,2,3,4,5,6,7,8, Spec.NHC

_____ _____ _____
Teacher's Last Name First Name of School Name of School District

For the month of_____, 19_____ the above pupil has taken routine medication:

none____ faithfully____ intermittently____

of the following kinds and amounts:

Name or Trade Name	Dosage	Times per Day(or Wk.)	By Mouth	By Injection

on the written orders of Dr._____
Name

_____
Doctor's Telephone Address

a copy of which is on file at school with

_____ _____ _____
Name Title Telephone No.

at school and in the presence of

_____ _____
Name Title

at home____ in the presence of mother____ father____.

Source of information for this report (if other than the person signing it).

_____

Signature_____

Title_____

#27226E
JWH:hrm
11-18-58

SAMPLE FORM NO. 8

Los Angeles County Superintendent of Schools
Division of Research and Guidance

RESEARCH AND DEMONSTRATION PROGRAM FOR NH CHILDREN

To furnish data for the third year report, please check for the children listed below both the actual and the theoretically optimal* placements next year.

Case #	Name	Actual Placement					Theor. Optimal Placement						Difficulties Remaining If Any**						
		Regular Class			NH Class		Regular Class			NH Class		Other (Specify on back)	Basic Skills					Behavior	
		Full time	Part time	Give Grade	Full time	Part time	Full time	Part time	Give Grade	Full time	Part time		Speaking	Reading	Spelling	Writing	Math	Hyperim-pulsivity	Other (Specify on back)

*This means whatever the psychologist would recommend if NH classes or any other facilities were freely available.
**Single check (✓) = moderate; double check (✓✓) = severe.

#30032
JWH/sd
8-1-61

Signature of School Psychologist

Name _____ Case # _____

1. The above case attended special NH class for the months checked: (Count fractions of months as whole months.)

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
1958 - 59										
1959 - 60										
1960 - 61										

In addition to the check marks above, please mark with an asterisk each month in which child was sent back to regular class for <u>part</u> time instruction.

2. Child was returned to regular class for full time instruction _____ Mo. & Yr.

3. Parents moved to _____ during _____ Mo. & Yr.

4. Parents requested child's removal from special class _____ Mo. & Yr.

Reasons given _____

_____

5. Parents requested child's return to special class _____ Mo. & Yr.

Reasons given _____

_____

6. <u>If</u> the project were continuing in 1961 - 62, this child would probably be assigned to: (Check)

a) Special NH class <u>full</u> time ____

b) Special NH class <u>part</u> time with visits to regular class ____

c) Regular class full time ____

If to regular class full time, give grade to which he would go ____

d) Regular class part time with some form of special help in

reading_____

spelling_____

mathematics_____

speech_____

other_____ (specify)

JH/sd
7-24-61
#30022-B

SAMPLE FORM NO. 9

Los Angeles County Superintendent of Schools
Division of Research and Guidance

Form 60-1

RESEARCH AND DEMONSTRATION PROGRAM FOR NH CHILDREN

Summarizing and Processing Form

Please supply data checked

Date _____

I. General Information

(1) Child's Name _____ (Last) , _____ (First) (2) Case No. _____

(3) Birth Date _____ Yr. Mo. Day (4) District _____; School _____ (5) Teacher _____

(6) Child's Home Address _____ (7) Tel. No. _____

(8) Parents' Names: Father _____ Mother _____

(9) No. of Siblings: Older Male _____, Female _____; Younger Male _____, Female _____

(10) School Personnel to Contact re this Case _____

	Special Class	Regular Class	Itinerant
(11) Number of months in '57–'58 in			
Number of months in '58–'59 in			
Number of months in '59–'60 in			
Number of months in '60–'61 in			

II. Teacher's Measures

(12) **Jastak-Bijou Wide-Range Achievement Test**

School Year	Date Given Yr. Mo. Day	By Whom	Read. Grade	Spell. Grade	Arith. Grade
'57–'58					
'58–'59					
'59–'60					
'60–'61					

(13) **Burks' Behavior Rating Scale**

School Year	Date Given Yr. Mo. Day	Score (using *all* 5 columns)
'57–'58		
'58–'59		
'59–'60		
'60–'61		

(14) **Teacher Rating (State EDC Study)**

School Year	Date Given Yr. Mo. Day	Score Items #6–#14	Items #16 Yes	Items #16 No	Items #17 Yes	Items #17 No
'57–'58						
'58–'59						
'59–'60						
'60–'61						

(15) **Group Rating ('The Class Play')**

School Year	Date Given Yr. Mo. Day	Total of Selections	# Even Sel.	% Even Sel.
'57–'58				
'58–'59				
'59–'60				
'60–'61				

(16) **Pupil Self Rating ('Thinking About Yourself')**

School Year	Date Given Yr. Mo. Day	Score*
'57–'58		
'58–'59		
'59–'60		
'60–'61		

* Use *even* items only; square the 'difference' scores; add the squares

III. Psychologist's Measures

(17) **Bender-Gestalt**

School Year	Date Given Yr. Mo. Day	Score
'57–'58		
'58–'59		
'59–'60		
'60–'61		

(17a) **Harsh-Soeberg**

Date Given Yr. Mo. Day	Partial and Total Scores I	II	III	IV	V	VI	Total	G.P.

(18) **Bender Recall**

School Year	Date Given Yr. Mo. Day	Score
'57–'58		
'58–'59		
'59–'60		
'60–'61		

(19) **Full Wechsler Intelligence Scale for Children (12 subtests)**

School Year	Date Given Yr. Mo. Day	By Whom	Verbal Tests: Scaled Scores Inf.	Comp.	Arith.	Sim.	Voc.	Digit Span	Raw Score Forward	Raw Score Backward
'57–'58										
'58–'59										
'59–'60										
'60–'61										

School Year	Performance Tests: Scaled Scores P.C.	P.A.	B.D.	O.A.	Coding	Maze	Verbal I.Q.	Perf. I.Q.	Full I.Q.
'57–'58									
'58–'59									
'59–'60									
'60–'61									

(Over, please)

IV. Nurse's Records

___ (20) (20) **Draw-A-Man**

___ (21)

School Year	Date Given Yr. Mo. Day	M.A. Score	I.Q. Score
'57–'58			
'58–'59			
'59–'60			
'60–'61			

___ (22) (21) **Winter Haven Visual Achievement Test**

___ (23)

School Year	Date Given Yr. Mo. Day	Raw Score	Age Points	Total Score
'59–'60				
'60–'61				

___ (24) (22) **Children's Manifest Anxiety Scale**

School Year	Date Given Yr. Mo. Day	Score
'59–'60		
'60–'61		

(23) **Marble Board Test**

School Year	Date Given Yr. Mo. Day	Score
'59–'60		
'60–'61		

(24) **Ellis Designs**

School Year	Date Given Yr. Mo. Day	Score
'59–'60		
'60–'61		

___ (25) (25) **Vision Test** *(Use √)*

___ (26)

Type or Name	Date Given Yr. Mo. Day	Deficit If Any

(26) **Audiometric Test** *(Use √)*

Type or Name	Date Given Yr. Mo. Day	Deficit If Any

___ (27) (27) **Height-Weight Record**

Date Yr. Mo. Day	Ht.	Wt.	Wetzel Grid Channel	Dev. Level

___ (28) (28) **Vineland Social Maturity Scale**

___ (29)

___ (30)

School Year	Date Given Yr. Mo. Day	Basal Score	Additional Credit	Total Score	Social Age	Chronological Age	Social Quotient	Informant: Mother	Informant: Father	Informant: Child
'59–'60										
'60–'61										

(29) **Lincoln-Oseretsky Motor Development Scale**

School Year	Date Given Yr. Mo. Day	Motor Age	C.A.	Motor Quotient
'59–'60				
'60–'61				

(30) **Harris Tests of Lateral Dominance**

School Year	Date Given Yr. Mo. Day	Eye R	Eye L	Hand R	Hand L	Foot R	Foot L
'59–'60							
'60–'61							

V. Physician's & Lab. Measures

___ (31) (31) **Visual Fusion Threshold (CFF)**

___ (32) (32) **Auditory Fusion Threshold (AFF)**

___ (33) (33) **Spiral After-Effect**

___ (34) (34) **Carpal X-ray (bone age)**

___ (35) (35) **Endocrine Assays**

___ (36) (36) **Medical Examination**

___ (37)

___ (38)

(Name) By Dr.	Date Given Yr. Mo. Day	Diagnosis +	Diagnosis –

(37) **Medical History**

Form A	Form B	Date Taken Yr. Mo. Day	*(Name)* By	Title

___ (39) (38) **EEG**

___ (40)

___ (41)

(Name) By Dr.	Date Given Yr. Mo. Day	Diagnosis +	Diagnosis –

(39) **Special EEGs**

(40) **Medications Taken**
Name, dosage, approx. dates

(41) **Other**

VI. Parents' Forms

___ (42) (42) **Request for Special Class**

Yes___ No___

___ (43) (43) **Authorization for Release of Confidential Information**

Yes___ No___

___ (44) (44) **Authorization for Publication**

Yes___ No___

___ (45) (45) **Parent Opinionnaire**

School Year	Date Given Yr. Mo. Day	Score
'57–'58		
'58–'59		
'59–'60		
'60–'61		

VII. Other

___ (46) (46) **Speech Test**

___ (47) (47) **Gilmore Oral Reading Test**

A & D Com. Mtg. Date ___

Place ___ Action ___

1) ___ 4) ___

2) ___ 5) ___

3) ___ 6) ___

Signatures

JWH:em
#28616 MU
6/1/60